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An Address
ON
THE TEACHING OF OBSTETRICS.

DELIVERED TO THE EDINBURGH OBSTETRICAL SOCIETY
BY
B. P. WATSON, M.D., F.R.C.S.E.,
PROFESSOR OF MIDWIFERY AND DISEASES OF WOMEN, UNIVERSITY OF EDINBURGH; PRESIDENT OF THE SOCIETY.

[FOLLOWING some introductory remarks, Professor Watson continued as follows:]

I propose in this address to direct your attention to what may be accomplished in the future, to inquire whether we are laying the proper foundations for advance, and whether we are embodying in our teaching the advances already made in such a way as to make them available to the graduates of our medical schools.

A calm review of present conditions is always helpful. Most of us are so busily engaged in the daily round of practice and teaching that little time is allowed for reflection. Things we have done in the past we are inclined to continue to do out of mere habit, or because of a certain mental laziness which makes the effort of change seem too great. Tradition has its drawbacks as well as its advantages. Conservatism is to be commended when it makes us hold on to the things which are of proved value, but it must be condemned if it renders us incapable of appreciating and making full use of the newer ideas which emerge with time. This leads up to the questions I am going to put and to attempt to answer. Has our teaching of obstetrics and gynaecology kept pace with the advances made in these subjects in the last twenty years? Does our teaching equip the young graduate for the work he is expected to do when he leaves the medical school? Is the training of our midwives and nurses carried on in such a way as to give the maximum of benefit to the community and to themselves?

The advances made in obstetrics in the last thirty years have been mainly in two directions: in the perfecting of the technique, including a much better understanding of the indications for, and limitations of, the various operative procedures; and in the recognition of the importance of ante-natal examination and supervision. We have travelled so far along these two lines that, theoretically, we should already be seeing the results in a reduced maternal mortality throughout the country. That reduction, unfortunately, is not yet evident, and it is one of my purposes to-night to try to arrive at the reasons for this disappointing result.

I am not going to weary you with statistics. These have been cited over and over again in numerous publications, and have been investigated by different commissions which have been set the task of inquiring into them. All these tables, for England and Wales, for Scotland, and for most other countries, tell the same tale of a maternal mortality of from 4 to 6 per 1,000, more or less constant for the past twenty or thirty years. "The general death rate has been reduced by one-third; the infant mortality rate has been halved since the beginning of the century, yet the maternal mortality rate is little lower than it was twenty years ago."[1] Whilst this statement is justified by the statistics available we must not take them too literally. I think there can be no question that there has been a reduction in maternal mortality in the hands of individual practitioners and in our maternity hospitals. The individual practitioner carrying on an obstetrical practice according to modern ideals has better results than he would have had thirty years ago, carrying out in the same conscientious way the ideals of that time. Notification of deaths due to puerperal causes is more complete to-day than it has ever been, so that a larger proportion of such deaths are tabulated than was formerly the case. Notwithstanding those corrections, we must still regard the figures as too high. And, apart from mortality, can any of us say that morbidity due to childbirth is any less in its incidence than it was? The numbers of cases awaiting admission to our gynaecological wards for operative treatment supply the answer. Why is it that in this one field of medicine there is so little to show in the way of improved results? The answer must be that, for some reason or reasons, we, as a profession, are not putting our theories into practice. This failure on our part is due to several causes. One of these, undoubtedly, is the inadequate training of our students; but, whilst I shall devote most of my time to a consideration of means for improving this, we must not forget that other factors play a part. A large share of the responsibility rests on the general community. It must supply the funds for the improvement of medical education, for the erection and maintenance of larger and better maternity hospitals, for the provision of ante-natal care, and for the supply of proper equipment for the conduct of labour in the houses of the poor. The economic problem is one which we must leave to our statesmen to solve. Until it is solved no great advance is possible. Meantime, it is for us to form public opinion by stating the case and suggesting remedies.

Textbooks and Systematic Lectures.

Let us, then, first consider the training of our students, for on this depends advance in all other directions. I need say little about theoretical teaching. I am still a believer in systematic lectures. From these the student ought to obtain the foundation on which to build his clinical experience. These lectures have formed in the past a very distinctive and valuable method of teaching in our Scottish universities. To-day they still have their place, but in a modified form. Twenty or thirty years ago there were very few textbooks, and these were not always available to the student. Each subject could be more or less completely covered in one hundred lectures, and the student's notes came to constitute his textbook. Now that has all changed. Many good textbooks are available in all subjects. It is no longer possible to cover the whole of any one of the major subjects in a course of one hundred lectures. Some modification of the method is thus necessary.

If an adequate understanding of the subject is to be got, if time and energy are to be conserved for the teaching and learning of the practical and clinical sides, more and more use must be made of reading for the acquisition of the groundwork by the student. The lectures, therefore, should not be a mere reiteration of textbook articles, but should reflect the individual experience of the lecturer. If they do not do so they fail of their purpose. They should deal with broad general principles and be freely illustrated by clinical pictures. They should be supplementary to, but not a substitute for, a textbook. Their chief object should be to give the student a proper perspective of the subject, and to direct him in his reading and in his clinical work. In midwifery these objects can be easily attained in fifty lectures, while from fifteen to twenty ought to suffice for gynaecology. During this course the student ought to have access to the museum and practical room of the department, where he can acquire a first-hand knowledge of pathology and make use of models, manikins, and instruments. This is the scheme which we are now following in the University of Edinburgh.

Clinical Instruction.

After such an introduction the student is in a position to acquire clinical knowledge. Hitherto the teaching of clinical midwifery has been very incomplete. It is not so very long since the attendance at clinics in a maternity hospital was first insisted on. All that the student was called upon to do was to undertake so many cases of labour under the supervision of a hospital or practitioner. He very often had never seen a case conducted in the hospital, and when he went out to attend the patient in her own home he had a totally inadequate equipment for the carrying out of a proper antiseptic or aseptic technique. All that required to be changed. It is now necessary for every student to attend clinics in the maternity hospital in addition to conducting cases himself. Our problem to-day is to ensure that the teaching he receives in those clinics and in the hospital is the best he can possibly get. Teaching has been handicapped in the past because a proper allocation of time for it in the medical curriculum was not made. Any odd hour in the day was taken for the purpose, and the student was only in the hospital during the hour of the clinic, when it so very often happened that no cases were available for demonstration. Such a state of matters could

not be allowed to continue. Clinical midwifery must be taught in the same way as clinical medicine or clinical surgery. The student must come in direct contact with the cases, and he must be given opportunities for examining patients and forming his own judgement upon them. This can only be attained by having the student in more or less constant attendance at the maternity hospital over a certain definite period. He must be free from other classes so that he may attend at the hospital at any time during day or night when work is going on. He must for a definite time live, as it were, in the atmosphere of obstetrics. An isolated clinic once or twice a week, or even once a day, over a short period of time is not sufficient. The University of Edinburgh has adopted the plan of requiring of every student that he devote one term of ten weeks in his final year to the study of clinical obstetrics, clinical gynaecology, and diseases of children. Clinical gynaecology and pediatrics occupy, on an average, not more than one hour a day each, leaving the rest of the twenty-four hours for intensive work in clinical midwifery. During this time, in addition to set clinics conducted daily in the maternity, the student must attend a series of demonstrations in the practical room at the University. At those meetings obstetrical and gynaecological subjects are discussed by the groups of students under the supervision and direction of one of the assistants. They have an opportunity of working with models and instruments, and there is available a representative teaching collection of specimens in the Obstetrical and Gynaecological Museum. Groups of students are detailed each day to be on duty at the Maternity Hospital. During those days they have the opportunity of seeing all the work during the twenty-four hours.

The student's interest is deepened, and the value of the teaching to him is increased, by insisting that short notes be kept of the various clinics he receives, the reading he does, and the operations he witnesses. Those notebooks are inspected by the clinician at the end of the term, and are awarded a mark in the final summing up of the student's work. At the end of the term the student is examined clinically and orally. The mark he obtains in this examination, together with that given by the clinician for the character of his notes and his general work in the wards, is added to the mark awarded in the written and oral examinations for his degree. His final standing is determined on the aggregate of marks. Such, in brief outline, is the method of clinical and practical teaching now being carried on in the University of Edinburgh. It is not by any means a perfect system, and we are handicapped in various ways in the carrying of it out, especially by the large numbers of students with which we have to deal, and by the inadequacy of the teaching accommodation in our Maternity Hospital. It would be an enormous benefit to the students if small groups could, for a time, actually live in the hospital or in a hostel in connexion with it, and so be able to take a more active part in the work going on. In the planning of any new maternity hospital in a teaching centre this must not be lost sight of.

Ante-natal Work.

A little more must be said about the character of the teaching in clinical obstetrics. That teaching ought to be directed, to a very large extent, to enabling the student to acquire a knowledge of ante-natal conditions and of what may be called preventive midwifery. For these purposes the ante-natal clinic should be the principal place of instruction. There is no want of clinical material there, but the great difficulty in most schools is want of space and proper equipment. If, and when, we get a new maternity hospital in Edinburgh, we must see that the ante-natal department is large and is planned and equipped in such a way that large numbers of patients can be dealt with quickly. The system in vogue at the Tarnier Hospital in Paris, under the direction of Professor Brindeau, seems to me an ideal one. A large ward is used for this part of the work. It contains about twenty beds or examining couches, each separated from the other by a simple screen. When the out-patient arrives she undresses, puts on a dressing gown, and is placed on the examining couch. To each patient two students are assigned. The student takes the history, makes a general examination, carries out abdominal palpation, measures the pelvis, and makes a diagnosis of the period of pregnancy, presentation, position, and engagement or non-engagement of the presenting part. His findings are checked by the clinical assistants, several of whom are always present. At a set hour the chief of the clinic passes along, discusses the patients with the students, and thoroughly investigates any abnormalities. In this way large numbers of patients can be dealt with in a very short time. No patient is overexamined, and yet a very adequate training is given to the students. I need not mention the tremendous advantage to the patient herself in that she has not to wait long hours in the clinic. Until we get some such arrangement we cannot possibly give our students the training in ante-natal work which they ought to have, and we shall not get all the patients to attend who should.

The teaching of abdominal palpation is, to my mind, one of the most important things in obstetrics. If we could send out all students thoroughly trained in this method of diagnosing presentation and position, and capable of forming an estimate of the relative size of presenting part to pelvis, we should be doing a great work. In the lecture room and at clinics we impress upon them the importance of this examination. It is necessary, however, that they have many opportunities of carrying out the actual examination themselves. The systematic use of pelvimetry ought also to be thoroughly taught. There is a very general feeling among the older practitioners that the taking of pelvic measurements is difficult. We must disabuse our students of this idea, and we must see to it that everyone who goes into practice possesses a pelvimeter and knows how to use it. A great part of the teaching in the maternity hospital should thus be devoted to clinics and practical instruction on the pregnant woman. No student can have too much of that.

On a more thorough training of our students along these lines lies our hope of reducing puerperal morbidity and mortality from obstructed labour and from untimely and unnecessary interference with normal labour, from the toxaemias of pregnancy, and from the haemorrhages. The necessity for ante-natal care and supervision is coming to be recognized by a large part of the community. Its universal adoption can only come through the effort and example of the whole body of medical practitioners thoroughly trained in its details.

Before leaving the subject of ante-natal teaching let me also emphasize the necessity for instructing students in post-natal conditions. As ante-natal care is preventive midwifery, so post-natal care is preventive gynaecology. A properly organized post-natal clinic should be an integral part of every maternity hospital. It requires no additional space or equipment, as that set apart for the ante-natal clinic can be used for it. In such a clinic the student should be instructed in the prevention and treatment of the various disabilities which may follow parturition. The importance of this is recognized by all of us, and yet, in most medical schools, instruction in it is sadly deficient. One of the principal reasons for this is again the want of proper accommodation.

The teaching in the hospital itself must be conducted as cases allow. One of the very important things is to teach a proper system of aseptic or antiseptic technique, and to that end we must make our hospital technique as rigid as it can possibly be made. I have heard it stated that it is no use trying to teach a rigid aseptic or antiseptic technique in midwifery, as it is never possible to carry it out in the patient's own home. Such an argument is most pernicious. I believe that a large proportion of the deaths from sepsis in childbirth can be traced to this fallacy. It has been said over and over again that labour cannot be conducted aseptically—that it is not possible to apply the same principles to the conduct of a labour as to the performance of, say, an abdominal operation. I absolutely dissent from this view. Take, for instance, the matter of preparation of the patient for labour. It is the commonest thing to hear it said of a case which has become septic that every possible precaution had been taken, and yet we find that the vulvar region had not been shaved. What would we think of a surgeon who did the most minor operation on a hair-bearing area without a preliminary shaving of the

part? It is very extraordinary how in this one piece of aseptic technique obstetrics should have lagged so far behind general surgery. As a compromise, clipping of the hair is pretty extensively carried out, but that is a very poor substitute. We are not justified in speaking of auto-infection from organisms in the vagina in any case in which this simple surgical precaution has not been taken. As an argument against it, it has been advanced that the patients object. I have yet to meet the woman who, when the necessity for it was explained to her, objected to being shaved. The difficulty of the procedure has been cited. With any form of safety razor it is just as easy to shave as to clip, and there is as little likelihood of causing injury to the patient. I feel perfectly certain that if this simple procedure were universally adopted throughout the country the incidence of puerperal sepsis would be materially lessened. It ensures greater safety to the patient, not only during labour but in the puerperium. It renders the nursing very much easier, and minimizes the danger of the access of organisms to the genital tract in the first few days following labour—a danger which, I believe, has not been sufficiently recognized. No vaginal examination of a patient in labour should be made before shaving is done and the vulvar region thoroughly cleansed with some efficient antiseptic. The dorsal position is the one which ought to be adopted for this examination, as only in this position can the labia be thoroughly separated and the fingers introduced directly into the vaginal cavity. Another point in aseptic technique very often neglected is the proper emptying of the lower bowel during the course of labour. In a first labour lasting for twenty hours or longer the initial enema is not sufficient: that enema ought to be repeated every four hours during the course of the labour. Only in this way can we be sure that the lower bowel is emptied of faecal matter and that there will be no escape when the head comes down on to the pelvic floor.

The Conduct of Labour.

During the actual process of delivery in the hospital the same rigidity of technique should be carried out as in the surgical operating room. The complete field surrounding the patient should be sterile. But it is on the carrying out of the minor details that emphasis should be laid. The students at the delivery ought to be asked to keep their eyes open for any breach of technique. This is one of the best ways in which to develop in them what may be called the "aseptic conscience," and it is only when an individual possesses such a conscience that his technique will approach anything like perfection.

After such a training in the hospital we must ensure that, when the student attends his cases in the district, he is supplied with a proper equipment so that he can conduct the case with the same care as in the hospital. The hospital should supply him with sterile nailbrush, gown, and gloves, sterile towels and swabs, and two small sterile basins. All of these can be packed in bundles with stout cotton covers, and carried in a bag, together with the simple instruments—such as scissors, artery forceps, ligatures, mucus tube, needles, and antiseptics—required for the ordinary case. The instruments can be sterilized in the hospital, wrapped in a sterile towel and covering, and so be ready for immediate use. Instruments can be kept for a considerable time in this way without detriment. He should not attend the case except along with a nurse, who is responsible for the preliminary preparation of the patient, administration of enemas, etc. To his first cases he should be accompanied by the extern resident surgeon, who sees that all detail is properly attended to. If the student begins his obstetrical work in this way he will attain to a higher degree of surgical technique in his subsequent obstetric practice than has been the rule hitherto. All of this adds considerably to the expenses of the hospital, but it is necessary expenditure. Such a method is carried out in many of the hospitals in the United States and Canada, and in some in this country. Until it becomes universal in all the training of the student will be inadequate, and we cannot look for any great improvement in our mortality and morbidity so far as these are due to sepsis.

If we really face the facts I think we must admit that very often the conduct of labour in the ordinary house falls far short of the surgical ideal. The enormous reduction in the mortality from surgical operations, and the greatly increased scope of operative procedures, are due to three principal factors—rigid asepsis, prevention of all unnecessary trauma to the tissues, and avoidance of shock. These are the three things that are of importance in labour, the neglect of which leads to most of the maternal deaths.

With regard to asepsis, I have already gone into some detail so far as the training of the student is concerned. How is the equipment I have mentioned to be provided for the doctor confining the working woman in her own home? At the present rate of remuneration for midwifery cases in general working-class practice it is impossible for the doctor or midwife to provide such equipment for each case. One of the recommendations made to the Scottish Board of Health by the Scottish Departmental Committee on Puerperal Morbidity and Mortality is: "That local authorities be empowered to furnish on loan sterile outfit and equipment at a reasonable charge, which should be remitted in necessitous cases." This recommendation, if given effect to, will go a long way to the solving of the problem. The cost to local authorities would be small, for such outfits could be used over and over again after resterilization. Several surgical firms and nursing homes already supply this equipment, but their charges are beyond the means of the working-class patient. Here again let me emphasize that the thing needed above all is attention to detail in the use of whatever equipment is provided. It is no use providing a sterile field if the hands, whether bare or gloved, are soiled by contact with non-sterile objects and then brought into contact with the patient's genitals. Soiling of the hands is very often unavoidable when the doctor is single-handed or has inadequate assistance. It is necessary that he have by him a reliable antiseptic solution in which they may be disinfected. I am in thorough agreement with Donald and others who deplore the use of weak solutions of lysol to the exclusion of more powerful agents such as perchloride and biniodide of mercury. One of the greatest advantages in the use of gloves in midwifery practice is that the gloved hand can be more thoroughly disinfected during the course of the labour, as a much stronger solution can be used than would be tolerated by the bare hand.

It goes without saying that the fewer examinations made on the parturient woman the less the danger of sepsis. Rectal examination has been advocated instead of vaginal, but even rectal examination is not free from danger in these cases, where potentially pathogenic organisms are present in the vagina, for in the examination the vaginal wall is pushed up through the cervix and the organisms may thus be directly introduced into the uterine cavity. With the acquisition of greater skill in, and the appreciation of the value of, abdominal palpation, internal examinations of all sorts will become fewer and fewer. Abdominal examination at the beginning of labour reveals the fixation of the head and the exact position of the child. As the second stage progresses descent can be followed until the head is no longer palpable. Very soon after this the pelvic floor begins to bulge, and the progress can be followed visually. The ideal way in which to conduct a labour is to make no internal examination at all, or to make only one just after rupture of the membranes to exclude such an accident as prolapse of the cord. If the patient's pelvis has been measured and a vaginal examination made in the later months of pregnancy, and if the head is presenting and fixed at the beginning of the labour, there should be no necessity to do more. To make vaginal or rectal examinations simply to satisfy curiosity as to how things are progressing is not justifiable. If we train students and midwives in this way their training can be carried out with a minimum of discomfort and risk to the patients. Such abdominal examinations can be made by several pupils on the same patient, and there should no longer be the necessity of insisting that only one pupil can be officially trained on each patient.

Under supervision a small group of students, or of pupil midwives, can learn infinitely more by thus following cases of labour in hospital than each could possibly do by attending a large number in their own homes. Far too much stress has been laid on the individual attendance on the outdoor case. To send a student to confine a woman in a poor house, without the assistance of a nurse, is the very

worst training possible for him. Both should be present, and, in so far as the regulations laid down by the General Medical Council and the Central Midwives Board regarding the number of cases to be attended are concerned, that case should count for both. So long as domestic midwifery is practised students and midwives must be instructed by attendance on patients in their own homes, but that should constitute a minor, not a major, part of their training.

The avoidance of unnecessary trauma and shock may be considered next. It must be part of our teaching that all forms of forcible delivery are attended by both. Potentially pathogenic organisms, which would never become active in healthy tissues, may rapidly acquire virulence in bruised or devitalized tissues. We all know the high incidence of sepsis in the "failed forceps" case. We must teach that such operations as high forceps and version are of the nature of major operations, and must not be undertaken except under such conditions as would be deemed necessary for a surgical procedure of like severity. In this matter the public requires educating. It is often a difficult thing for a practitioner to persuade a patient and her friends that removal to hospital or nursing home is in her best interests. That difficulty will, I am sure, become less and less as doctors see their patients more and more frequently throughout their pregnancies, and so gain their confidence.

When we come to consider forceps application in general we reach the crux of the matter so far as midwifery practice as at present conducted is concerned. Obstetrics takes up more time in proportion to the monetary return than any other part of the work of a general practitioner. He cannot overtake all his work and give adequate time to his midwifery cases—hence the tendency to hurry delivery. It seems to me that the solution is to be found in the closer co-operation of the doctor and midwife. Such co-operation should include the ante-natal examination of every patient by the doctor, the measurement of the pelvis, the routine examination of the urine, and, two weeks before term, the determination of presentation and position, and the relative size of head to pelvis. Under normal conditions attendance at the labour would be undertaken by the midwife, who has the assurance that, on the development of the slightest abnormality, the services of the doctor can be obtained. The number of needless forceps deliveries would in this way be reduced, and the forceful delivery before full dilatation of the os and engagement of the head a thing unknown.

In such co-operation also lies the hope of a reduction in the number of women suffering from neglected birth injuries. The midwife attending a case on her own responsibility hesitates to inform the patient of the occurrence of a tear and the necessity for its repair, unless it is an extensive one. That tendency would be minimized by her closer association with the doctor. In this matter of the recognition and repair of pelvic floor injuries there is need for more detailed teaching of students. It must be demonstrated to them that the absence of external tearing is not proof that an internal tear, involving the postero-lateral vaginal wall and levator ani, is not present; that such a tear can only be detected by careful separation of the labia and digital examination, and that its repair is essential if future disability is to be prevented. The proper method of repair must be demonstrated to them in hospital over and over again. They must be taught that, whilst every precaution must be taken to prevent lacerations, these are in many cases unavoidable, and that it is no reflection on their skill if they sometimes occur. A wider recognition of this fact by doctors and midwives would result in fewer of these cases being neglected. One of the findings of the Scottish Departmental Committee on Puerperal Morbidity and Mortality, based on evidence submitted, is that the co-operation of midwife and doctor, in the manner above stated, is a thing to be encouraged in every way.

Training of Midwives.

Whilst I have spoken mostly on the training and teaching of the student, the same principles apply generally to the training of the midwife. Both can and ought to be taught in the same hospital, but they must be in such proportions that a proper training can be given to each. In the large hospitals connected with our medical schools the training of students ought to be the first consideration. In many of these hospitals the number of midwives trained is so great as seriously to diminish the clinical material available for students. From the point of view of the hospital this condition of affairs is justified by the necessity of having a sufficient number of pupil midwives for the nursing of the patients. That difficulty would be overcome if obstetrical nursing were made part of the general nursing curriculum in every training school. By co-operation between the general hospital and the maternity hospital every nurse could pass through the latter, not training as a midwife, but as an obstetrical nurse. I should like to see the time come soon when no nurse will be considered fully trained until she has had such experience. The lack of it is a very serious handicap to those of our nurses who may wish to practise their profession in our dominions. In Canada, for instance, a nurse with full training in a general hospital here, but with no experience in obstetrical nursing, cannot be registered and is not recognized. At the present time a great many of our general nurses train as midwives, not because they have any intention of practising as such, but simply because it is the only way in which they can acquire a knowledge of obstetrical nursing. The clinical material used by them would be much better utilized in providing more patients for our students and bona-fide midwives.

The Maternity and the General Hospital.

The importance of the linking up of the maternity hospital with the general hospital is being recognized throughout the world. After a temporary tendency to the separation of obstetrics from gynaecology, these two subjects have again come to be regarded as essentially complementary to each other. The one cannot be fully understood without the other, and the practice of both should be in the same hands. In Germany the Frauenklinik has been a feature in the teaching schools for many years. Very often, however, it was too much of a separate self-contained unit. In this country gynaecology has advanced and taken its place alongside general surgery, largely because the gynaecological department has been a part of the general medical and surgical hospital. The status of obstetrics in its relationship to the other branches of medical teaching and practice has been very materially raised in the last fifteen or twenty years. Its importance, in relation to the general health of the community, is being more fully recognized every day. To my mind there is no one single change which will do more to put it and maintain it in its rightful place than the establishment in every general hospital, and certainly in every teaching hospital, of a fully equipped maternity department. The obstetrician would then have the advantage of close contact and frequent consultation with the workers in all other clinical departments, and there would also be available for him all the laboratory facilities for investigation and research which are so essential to further advance. Such a problem as the toxaemias of pregnancy cannot be solved except by the co-operation of clinical and scientific workers. Such co-operation has been extremely difficult in the past owing to the isolated position of our maternity hospitals and the impossibility of providing them with proper laboratory equipment and workers.

In Edinburgh the first maternity beds were established in the old infirmary. Now, when we are faced with the necessity of providing a larger and more modern maternity hospital, I hope that no step will be taken until the advisability and possibility of the closest possible association of that new hospital with the Royal Infirmary has been most thoroughly explored. There may be minor difficulties to be faced. It is to be hoped that these will not be allowed to overshadow the larger question. Edinburgh has a great opportunity now of taking a lead in this matter, and I trust that she will not lightly let it pass.

I have been able, in the time at my disposal, to mention only a few of the problems which confront us. It may be thought that I have spoken at undue length on the solution of some of them. I have done so because I believe that the great need at present is to emphasize the necessity for a more detailed and careful practical application of the principles which we all recognize and accept. In this lies our hope for the future.

REFERENCE.

[1] *Maternal Mortality.* Ministry of Health publication.

THE CLINICAL USE OF THE SPHYGMOMANOMETER.*

BY

K. DOUGLAS WILKINSON, O.B.E., M.D., M.R.C.P.

ALTHOUGH Harvey announced the discovery of the circulation of the blood in 1628, our knowledge of the circulation did not advance materially until Carl Ludwig introduced the graphic method of studying the heart's action two centuries later. He fixed a float to a mercury manometer and arranged so that the movements of the float were recorded upon a revolving drum, and since this the evolution of instruments and knowledge has been rapid. Each instrument invented has added something to our knowledge—sphygmographs, polygraphs, electro-cardiographs, etc.—and it is an interesting paradox that the use of instruments of precision in medicine has a way (largely because of their educational value) of diminishing the necessity for their use. Thus the sphygmograph taught us many facts about the pulse which could be recognized subsequently without the aid of the instrument. The electro-cardiograph was necessary for the detection and explanation of auricular fibrillation, though we now recognize this condition without its use, and to some extent the same is true of the sphygmomanometer.

The pulse may be defined as a rhythmic variation of pressures in an artery. The highest pressure reached—the systolic—is the result of the output of blood from the left ventricle. The lowest pressure—the diastolic—occurs at the end of diastole and is the result of three factors: (1) the rate of blood flow through the arteries and arterioles into the capillaries; (2) the volume of blood in the arterial system; (3) the action of the muscular and elastic coats of the arteries on the contained blood.

The pulse pressure is the difference between the systolic and diastolic pressures. The most highly trained finger is incapable of estimating systolic blood pressure accurately, and cannot give any certain information about diastolic pressure; indeed, the routine use of the sphygmomanometer will quickly convince anyone that it is useless to expect any exact information about blood pressures from digital examination of the pulse, since the size of the vessel, the condition of its wall, and the force of the pulse may easily lead the finger to form quite an incorrect conclusion as to the pressures in the artery.

The best method of obtaining the blood pressures is by auscultation over the brachial artery, but palpation may also be used to determine the systolic pressure.

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It is important to realize that an instrument only becomes really helpful when it has been used so often that its use is easy and its fallacies are obvious. In no individual does systolic or diastolic pressure remain constant: changes of position, exercise, food, or drugs produce changes of pressure which are more or less temporary. Excitement, with its accompanying cardiac frequency, always causes a considerable rise of pressure, so that it may be necessary to wait until the patient is composed before making an observation of blood pressure.

Calcification of arteries, even when considerable in amount, is of little importance as a source of fallacy in blood pressure estimations when more than two and a half inches of artery are compressed, for such a length of artery is never completely calcified. The normal artery offers but little if any resistance to compression, but when the artery wall is contracted to constrict the artery it may offer a considerable resistance. The best way to overcome this constriction is either to massage the limb for a short time or to repeatedly compress and decompress the limb with the armlet.

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A normal child of under 12 years of age should not have a systolic pressure of over 100 nor a diastolic pressure of over 75 mm. Hg unless it be very obviously in advance of its years in size or weight. In adults the normal systolic pressure varies between 100 and 160 mm. Hg and the normal diastolic pressure between 65 and 90 mm. Hg; and while pressure tends to rise with age there are many old men with quite low pressures. Again, pressures vary with physique, big powerful men having higher normal pressures than their physical inferiors, while in women the pressures are five or ten points lower than in men, age for age, and type for type.

At each heart beat the left ventricle forces blood into the aorta and so maintains arterial blood pressure, but the height to which this pressure rises depends upon the resistance of the arteries, arterioles, and capillaries, and the response that the ventricle makes to overcome this resistance. With a normal heart the ventricular response varies directly with the resistance—that is, with the diastolic pressure—and this fact is the keynote of physiological and pathological variations in arterial pressures.

When (under experimental conditions) the inflow into the heart is kept constant the output of the left ventricle is unaltered by changes in the heart rate or arterial resistance; but when the inflow varies the heart automatically alters its output to equal the inflow, so that in a given time the amount of blood entering the aorta equals that entering the right auricle. With a heart rate of 60 per minute the duration of ventricular systole is about three-eighths of a second, so that the heart works three-eighths of the day (nine hours) and rests five-eighths of the day (fifteen hours). G. N. Stewart calculates the daily work of the heart (ventricles only) at about 150,000 foot-pounds, and this is the work of a heart maintaining a systolic blood pressure of 120 mm. Hg. Prolonged increase in arterial resistance acts as a stimulus to the heart, increases ventricular volume, and, by giving the heart more work, causes hypertrophy.

The pulse pressure and the systolic pressure are raised by:

1. Excitement, nervousness, exercise.
2. Tonic contraction of the arterial wall such as occurs in asthma, migraine, etc.
3. Nephritis, acute and chronic.
4. Aortic regurgitation (patent ductus arteriosus, and arterio-venous aneurysm).
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6. Hyperpiesis—the condition described by Sir Clifford Allbutt in which there is a primary rise of blood pressure.

The pulse pressure and the systolic pressure are lowered by:

1. Loss of peripheral resistance from relaxation of arterioles, such as occurs in all atrophic and wasting diseases—phthisis, cancer, acute fevers, especially pneumonia and typhoid.
2. Anaemia from any cause, loss of blood (haemorrhage from lungs, etc.).
3. Cardiac asthenia in Addison's disease and starvation.
4. Vagus overaction in fainting attacks, collapse, and shock.

But apart from the detection of abnormally high or low pressures the sphygmomanometer gives us information about the regularity of pulse pressure, and is therefore of

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worst training possible for him. Both should be present, and, in so far as the regulations laid down by the General Medical Council and the Central Midwives Board regarding the number of cases to be attended are concerned, that case should count for both. So long as domestic midwifery is practised students and midwives must be instructed by attendance on patients in their own homes, but that should constitute a minor, not a major, part of their training.

The avoidance of unnecessary trauma and shock may be considered next. It must be part of our teaching that all forms of forcible delivery are attended by both. Potentially pathogenic organisms, which would never become active in healthy tissues, may rapidly acquire virulence in bruised or devitalized tissues. We all know the high incidence of sepsis in the "failed forceps" case. We must teach that such operations as high forceps and version are of the nature of major operations, and must not be undertaken except under such conditions as would be deemed necessary for a surgical procedure of like severity. In this matter the public requires educating. It is often a difficult thing for a practitioner to persuade a patient and her friends that removal to hospital or nursing home is in her best interests. That difficulty will, I am sure, become less and less as doctors see their patients more and more frequently throughout their pregnancies, and so gain their confidence.

When we come to consider forceps application in general we reach the crux of the matter so far as midwifery practice as at present conducted is concerned. Obstetrics takes up more time in proportion to the monetary return than any other part of the work of a general practitioner. He cannot overtake all his work and give adequate time to his midwifery cases—hence the tendency to hurry delivery. It seems to me that the solution is to be found in the closer co-operation of the doctor and midwife. Such co-operation should include the ante-natal examination of every patient by the doctor, the measurement of the pelvis, the routine examination of the urine, and, two weeks before term, the determination of presentation and position, and the relative size of head to pelvis. Under normal conditions attendance at the labour would be undertaken by the midwife, who has the assurance that, on the development of the slightest abnormality, the services of the doctor can be obtained. The number of needless forceps deliveries would in this way be reduced, and the forceful delivery before full dilatation of the os and engagement of the head a thing unknown.

In such co-operation also lies the hope of a reduction in the number of women suffering from neglected birth injuries. The midwife attending a case on her own responsibility hesitates to inform the patient of the occurrence of a tear and the necessity for its repair, unless it is an extensive one. That tendency would be minimized by her closer association with the doctor. In this matter of the recognition and repair of pelvic floor injuries there is need for more detailed teaching of students. It must be demonstrated to them that the absence of external tearing is not proof that an internal tear, involving the postero-lateral vaginal wall and levator ani, is not present; that such a tear can only be detected by careful separation of the labia and digital examination, and that its repair is essential if future disability is to be prevented. The proper method of repair must be demonstrated to them in hospital over and over again. They must be taught that, whilst every precaution must be taken to prevent lacerations, these are in many cases unavoidable, and that it is no reflection on their skill if they sometimes occur. A wider recognition of this fact by doctors and midwives would result in fewer of these cases being neglected. One of the findings of the Scottish Departmental Committee on Puerperal Morbidity and Mortality, based on evidence submitted, is that the co-operation of midwife and doctor, in the manner above stated, is a thing to be encouraged in every way.

Training of Midwives.

Whilst I have spoken mostly on the training and teaching of the student, the same principles apply generally to the training of the midwife. Both can and ought to be taught in the same hospital, but they must be in such proportions that a proper training can be given to each. In the large hospitals connected with our medical schools the training of students ought to be the first consideration. In many of these hospitals the number of midwives trained is so great as seriously to diminish the clinical material available for students. From the point of view of the hospital this condition of affairs is justified by the necessity of having a sufficient number of pupil midwives for the nursing of the patients. That difficulty would be overcome if obstetrical nursing were made part of the general nursing curriculum in every training school. By co-operation between the general hospital and the maternity hospital every nurse could pass through the latter, not training as a midwife, but as an obstetrical nurse. I should like to see the time come soon when no nurse will be considered fully trained until she has had such experience. The lack of it is a very serious handicap to those of our nurses who may wish to practise their profession in our dominions. In Canada, for instance, a nurse with full training in a general hospital here, but with no experience in obstetrical nursing, cannot be registered and is not recognized. At the present time a great many of our general nurses train as midwives, not because they have any intention of practising as such, but simply because it is the only way in which they can acquire a knowledge of obstetrical nursing. The clinical material used by them would be much better utilized in providing more patients for our students and bona-fide midwives.

The Maternity and the General Hospital.

The importance of the linking up of the maternity hospital with the general hospital is being recognized throughout the world. After a temporary tendency to the separation of obstetrics from gynaecology, these two subjects have again come to be regarded as essentially complementary to each other. The one cannot be fully understood without the other, and the practice of both should be in the same hands. In Germany the Frauenklinik has been a feature in the teaching schools for many years. Very often, however, it was too much of a separate self-contained unit. In this country gynaecology has advanced and taken its place alongside general surgery, largely because the gynaecological department has been a part of the general medical and surgical hospital. The status of obstetrics in its relationship to the other branches of medical teaching and practice has been very materially raised in the last fifteen or twenty years. Its importance, in relation to the general health of the community, is being more fully recognized every day. To my mind there is no one single change which will do more to put it and maintain it in its rightful place than the establishment in every general hospital, and certainly in every teaching hospital, of a fully equipped maternity department. The obstetrician would then have the advantage of close contact and frequent consultation with the workers in all other clinical departments, and there would also be available for him all the laboratory facilities for investigation and research which are so essential to further advance. Such a problem as the toxaemias of pregnancy cannot be solved except by the co-operation of clinical and scientific workers. Such co-operation has been extremely difficult in the past owing to the isolated position of our maternity hospitals and the impossibility of providing them with proper laboratory equipment and workers.

In Edinburgh the first maternity beds were established in the old infirmary. Now, when we are faced with the necessity of providing a larger and more modern maternity hospital, I hope that no step will be taken until the advisability and possibility of the closest possible association of that new hospital with the Royal Infirmary has been most thoroughly explored. There may be minor difficulties to be faced. It is to be hoped that these will not be allowed to overshadow the larger question. Edinburgh has a great opportunity now of taking a lead in this matter, and I trust that she will not lightly let it pass.

I have been able, in the time at my disposal, to mention only a few of the problems which confront us. It may be thought that I have spoken at undue length on the solution of some of them. I have done so because I believe that the great need at present is to emphasize the necessity for a more detailed and careful practical application of the principles which we all recognize and accept. In this lies our hope for the future.

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THE CLINICAL USE OF THE SPHYGMOMANOMETER.*

BY

K. DOUGLAS WILKINSON, O.B.E., M.D.,
M.R.C.P.

ALTHOUGH Harvey announced the discovery of the circulation of the blood in 1628, our knowledge of the circulation did not advance materially until Carl Ludwig introduced the graphic method of studying the heart's action two centuries later. He fixed a float to a mercury manometer and arranged so that the movements of the float were recorded upon a revolving drum, and since this the evolution of instruments and knowledge has been rapid. Each instrument invented has added something to our knowledge —sphygmographs, polygraphs, electro-cardiographs, etc.— and it is an interesting paradox that the use of instruments of precision in medicine has a way (largely because of their educational value) of diminishing the necessity for their use. Thus the sphygmograph taught us many facts about the pulse which could be recognized subsequently without the aid of the instrument. The electro-cardiograph was necessary for the detection and explanation of auricular fibrillation, though we now recognize this condition without its use, and to some extent the same is true of the sphygmomanometer.

The pulse may be defined as a rhythmic variation of pressures in an artery. The highest pressure reached—the systolic—is the result of the output of blood from the left ventricle. The lowest pressure—the diastolic—occurs at the end of diastole and is the result of three factors: (1) the rate of blood flow through the arteries and arterioles into the capillaries; (2) the volume of blood in the arterial system; (3) the action of the muscular and elastic coats of the arteries on the contained blood.

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After reassuring the patient as to the painlessness of the procedure (this is important because fear is a frequent cause of a raised blood pressure) put the patient as flat as possible and apply the armlet to the upper arm well above the bend of the elbow. See that both the patient and the arm are comfortable and relaxed. Apply a stethoscope to the inner side of the bend of the elbow over the lower end of the brachial artery, and while listening pump up the armlet. At first there is no sound, but as the pressure rises a sound appears which is dull and indistinct at first, but later becomes loud and clear, and then as the pressure is raised further the sound gets softer and finally disappears entirely. Now let the pressure fall by just opening the valve on the apparatus; the point at which the sound first reappears is the systolic pressure; allow the pressure to fall further, and the point at which the loud clear sound becomes soft and dull is the diastolic pressure. The finger on the radial pulse first detects the pulse beat at a point just below systolic pressure as read by the ear, but the finger cannot estimate diastolic pressure. Often the patient can tell the diastolic pressure, for as the pressure in the bag is raised there is a point at which a sensation of throbbing in the arm becomes very evident, and this is at or very near diastolic pressure.

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But apart from the detection of abnormally high or low pressures the sphygmomanometer gives us information about the regularity of pulse pressure, and is therefore of

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the greatest assistance in the diagnosis of cardiac irregularities, and indeed it often renders the electro-cardiographic or polygraphic examination of the patient needless, as it enables us to make an exact diagnosis.

In auricular fibrillation—important because it is so common, because it often implies grave myocardial disease, and because in certain cases the condition is now curable by means of quinidine—the pulse is irregular in force as well as in time, and in the cases with unusually slowly acting hearts the irregularity may not be easily felt by the finger. But when the sphygmomanometer is applied the irregularity is at once obvious by the variation in the sound heard over the artery—a variation which makes it difficult to determine exactly either the systolic or the diastolic pressure, for as the pressure in the bag is raised the more feeble beats are cut out and the heart appears to be less frequent, until at a certain pressure only an occasional beat can be heard. There are several facts which may enable us to diagnose the condition without the use of any instrument at all: a markedly irregular heart in which the heart rate as counted at the apex is greater than that at the wrist, because the weaker systoles fail to open the aortic valves; or the association of marked pulse irregularity with the disappearance of a presystolic murmur; or the marked slowing of the pulse which usually follows the use of digitalis, and the fact that neither exercise nor atropine as a rule produces either a greater regularity or a marked increase in heart rate.

In the form of irregularity known as pulsus alternans the sphygmomanometer may enable us to detect the irregularity before it is obvious to the finger. Here the pulse is regular in time but the beats are alternately strong and weak. Occasionally there is a slight alteration in time also, and where this is present the longer pause follows the stronger beat. In some cases extra-systoles follow every normal beat, so that the pulse waves are felt as alternately strong and weak, but there is always a well marked irregularity in time, and the longer pause always follows the weaker beat; or, to put it in another way, the pulse is felt as two beats, the second of which is the weaker, and a pause. Except in the alarm that they occasion in the patient these extra-systoles are of no importance. The true alternating pulse is always indicative of a very serious condition; it is found in advanced cases of myocardial disease, in renal disease, and in advanced arterio-sclerosis; it is sometimes discovered in acute diseases such as pneumonia, typhoid, or influenza; and may be the only discoverable physical sign in patients with angina. In my experience this form of pulse irregularity always implies an early fatal termination of the condition in which it appears.

The pulsus paradoxus is the pulse irregularity which is commonly associated with pericardial effusions. In this irregularity there is a failure of pulse volume during inspiration, so that at each inspiration the pulse either disappears entirely or becomes reduced in size. A slight degree of this irregularity is produced by quite small effusions into the pericardium, but such slight irregularity may be quite imperceptible unless it is sought for by means of the sphygmomanometer. Although the pulse pressure appears to be quite regular to the finger in such a condition, when the armlet is applied and the pressure in it is raised to near the systolic pressure the sound will be heard to vary markedly in intensity, being louder in expiration and softer or absent entirely during inspiration. Pericardial effusion may be particularly difficult to detect, and this sign is often of assistance in doubtful cases. Conditions which interfere with the inspiratory negative pressure in the thorax can also produce this pulse irregularity. A large pleural effusion, whether of gas or fluid, may lead to the paradoxical pulse, and in the war this irregularity was fairly commonly found in men with wounds of the chest, especially those in whom there was a large wound which allowed free ingress and egress of air to the pleural cavity at each respiration. Some children also show a slight degree of this irregularity of pulse volume in association with the juvenile type of irregularity in which the heart rate quickens during inspiration and slows during expiration.

In heart disease severe heart failure may take place without any noticeable change in blood pressure, for the heart will maintain the blood pressures at or near the normal even when its output per beat is insufficient to ensure an efficient circulation. As Sir T. Clifford Allbutt says, "the heart dies sword in hand." But sometimes we can recognize impending heart failure in changes in blood pressure. In cases of hyperpiesis, renal disease, or arterio-sclerosis in which there has been a high pressure for years, a fall in the systolic pressure without any change in the diastolic pressure is significant, and whether it be associated with an increase in distress, or with dyspnoea, or appear alone, such a change in pressures is to be regarded with apprehension. It has recently been shown that the higher the diastolic pressure the greater must be the pulse pressure for the same diastolic output per beat; so when a patient with a high diastolic pressure shows a fall in systolic pressure without any corresponding fall in diastolic pressure the output of his heart per beat is less, and, except there be a corresponding increase in pulse rate, his circulation is already beginning to fail. This fact shows the importance of reading the diastolic pressure as well as the systolic.

One of the well known signs of aortic regurgitation is the collapsing pulse, which was described by Corrigan ninety-two years ago—its peculiar character being due to the combination of a raised systolic pressure and a lowered diastolic pressure. In adults with aortic incompetence the systolic pressure is always above 120 mm. Hg, and the diastolic pressure is usually below 65 mm. Hg. Often it is very difficult to ascertain the exact diastolic pressure, as the pulse sound is loud even when the pressure in the armlet is at zero. Sometimes the sound heard over the artery is so loud that it resembles a pistol shot.

There is another curiosity in the arterial pressures in aortic disease which was first described by Professor Leonard Hill. In a normal individual standing up the arterial pressure in the leg at the knee is higher than the pressure in the arm at the elbow by the weight of a column of blood equal in height to the distance from the knee to the elbow; but when the normal man lies down, the pressures in arm and leg soon become approximately equal. On the other hand, in the great majority of cases of aortic regurgitation, when the patient is lying flat the pressure in the leg is considerably higher than that in the arm. The suggested explanation is that, in order to maintain a good supply of blood to the brain when the patient is erect, those arteries in which blood flow is retarded by gravity (those above the level of the heart) are completely relaxed, while those arteries in which the blood flow is assisted by gravity are in a state of tonic constriction, and that this spasm persists even when the patient is lying flat. In observing the leg pressures the armlet (or leglet) should be applied just above or just below the knee, and the stethoscope is applied either over the popliteal or posterior tibial artery. It is important to have a bag of sufficient width, as too narrow a bag gives high readings. The width of the bag should be about a quarter the circumference of the limb.

While this peculiarity is not invariably present in aortic regurgitation there is usually a difference of 30 mm. Hg between the systolic pressure in the arm and leg. The severity of the valvular lesion may be gauged by the pulse pressure—the higher the pulse pressure the worse the lesion; but if the diastolic pressure is 70 or more it is certain that the amount of the aortic regurgitation cannot be serious.

In hemiplegia from a cerebral haemorrhage the pulse pressure is always high, while in a thrombosis the pulse pressure is less than the normal for the diastolic pressure. If the hemiplegic is found to have a high and rising pulse pressure he is sure to die of his haemorrhage, or if the pulse pressure is low and falling he will die of his thrombosis. As an example of this statement I will quote a case, a man of 57, who had extensive arterial disease and a large heart. His blood pressure was 200/140. (Note that the normal pulse pressure for a diastolic pressure of 140 should be about 120 mm. Hg, while here it is only 60 mm. Hg, so that the systolic output of the heart must have been considerably reduced.) The patient had several cerebral

accidents, and finally succumbed. The *post-mortem* examination showed a very extensive cerebral thrombosis.

In enteric fever there are two accidents which it is often difficult to differentiate—perforation and haemorrhage. In the former a rise of blood pressure occurs after the primary shock, but in the latter the fall of blood pressure is always very marked and prolonged.

In pneumonia a rise of blood pressure before the crisis is often the first sign of some complication, while a fall may indicate impending heart failure.

Finally, blood pressure observation may be of considerable assistance in cases of albuminuria, a high blood pressure indicating renal disease—either a nephritis or that type of renal damage which results from hyperpiesis or arterio-sclerosis. In pregnancy the sphygmomanometer may be especially helpful, for it is often difficult to decide how much importance should be attached to a small amount of albumin in the urine of a pregnant woman. The normal systolic pressure of a woman of about 30 of average physique is about 112 mm. Hg. A pressure of over 130 would suggest the need for careful and frequent examination, and a pressure of over 150 would probably indicate the onset of eclampsia.

I do not think that a blood pressure of over 160 systolic or 90 diastolic is ever normal, although there are cases in which the diastolic pressure remains about 100 for a time without any ascertainable cause, and then returns to normal limits. Excitement may cause such considerable rises of pressure that it is well to bear in mind the rule that a high pressure is of greater significance when accompanied by a slow pulse.

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CHRONIC INTESTINAL STASIS AND EPILEPSY.*

BY

A. WHITE ROBERTSON, L.R.C.P. AND S.EDIN.,
LONDON.

IN the study of epilepsy it seems clear that whatever the actual exciting element the vascular system is the main source of the epileptic phenomena, either alone or as a carrier of toxic agents, and the work that has been done experimentally by the advocates of both views has been very considerable in the last twenty years. Cells cut off from their circulation, even momentarily, show a reaction towards acidity, and this acidity factor must not be lost sight of in the interpretation of the experimental results recorded by the mechanical and vascular theorists. Faradization, and epinephrin will also blanch pial vessels and produce epileptiform convulsions. The proteoses of Cuneo, to be presently described, have the same effect when painted on the cortex. Lastly, lactic acid given intravenously will also produce convulsive seizures. Acidosis, therefore, whether produced locally or remotely, would appear to play a considerable role in the production of the epileptic convulsion, and the work of Cuneo[1] during the last nine years at Genoa goes perhaps further than that of any other investigator to establish its importance.

Cuneo established the presence, in the blood of persons who had just had an epileptic seizure, of a substance which he identified with the proteoses, and this substance introduced intravenously into animals faithfully reproduced the epileptic phenomena. At the same time he showed that the urine of these persons contained an extraordinarily high percentage of organic acids. Other features were a retention of total nitrogen, an increase in the nitrogen content, and continuous acidity of the faeces. Comparative tests in epileptic groups with a protein-rich and with a carbohydrate-pure diet next gave unexpected results, the acidosis in the former group being reduced, with a corresponding improvement in the severity and number of the fits, whilst there was a percental increase in acidity in the second group, and the fits increased in number and severity. It was next established that the fault in the starch metabolism occurred in the first stage of conversion to the disaccharides, maltose, lactose, cane sugar, etc. Normally this takes place through the action of the amylolytic ferments, the subsequent conversion of maltose being effected by maltase ferment through hydration into glucose. The failure in the first stage resulted, in the absence of sufficient amylolytic ferment, in the production of a more or less intense concentration of organic acids—acetic, butyric, lactic, tartaric, etc.—and these, which should normally have been united with alkaline bases in the small intestine, passed in the epileptic into the blood stream and urine unchanged. The alkaline salts in normal individuals are oxidized—if ammoniacal through ammonium carbonate into urea, if sodium into sodium carbonate, and this is the vitally necessary salt for maintaining the alkalinity of the blood and tissues. Cuneo concludes from his work that this transformation of organic salts into sodium carbonate begins in the mucosa of the small intestine and is completed in the liver, whence the sodium carbonate is returned to the gut with the bile. Lack of bases favours the production of acidosis, while a sufficiency of sodium tartrate favours the activity of the liver ferments and the production of sodium carbonate. If sodium acetate or tartrate is introduced directly into the circulation it causes typical epileptic convulsions, and Cuneo was able to remove from the carotid artery of the animals used a substance which proved to be a proteose.

The source of these proteoses Cuneo found in the reduction of that fundamental constituent of all cellular nuclei, nucleo-histone, and in the case of the serum and leucocytes of the blood also this reduction takes place under conditions of acidosis due to the concentration of organic acids. In an acid medium he was able to demonstrate the reduction of nucleo-histone from both these sources into an innocuous acid and a toxic base having the chemical and biological properties of nucleinic acid and of proteose. Introduced intravenously in dogs the latter not only produced typical epileptic convulsions, but the *post-mortem* appearances in dogs dying in status epilepticus so induced were identical with those found in the viscera and the brain and its coverings in persons dying of proteosaemia (albumosaemia), and as described by Tanzi and Lugaro in their findings in patients who died in typical status epilepticus.

He believes that albumosaemia exists in epilepsy and that this is caused by an insufficiency of the alkali-forming function in the liver and the small intestine, so that the acid organic salts, which are transformable into sodium carbonate, do not undergo this metabolic change, but enter the circulation and cause a division under certain conditions of the nucleo-histone element and the nucleo-proteins into nucleinic acid and proteoses. These latter remain free and exhibit their convulsive action.

Localized acidosis in derangements of the circulation may also set free albumoses, or it may be other toxins, as in Jacksonian seizures; and in the convulsions associated with cranio-cerebral injury with scar adhesions, brain abscesses, circumscribed areas of encephalitis, brain tumour, cysts, general paralysis, cerebral arterio-sclerosis, the acidosis produced by interference with the vascular supply may, as suggested by Professor Osnato,[2] determine the release of proteoses locally in cells cut off from their circulation, and so excite the convulsions associated with these conditions. In general paralysis and arterio-sclerosis, and probably also in encephalitis, the vascular disturbances and the local cellular destruction processes in the brain elements are ideally combined to produce generalized convulsive seizures.

A little over two years ago it was my privilege to address you on the possibility of proving a close connexion between epilepsy and chronic intestinal stasis. More recently I have published a preliminary report[3] on a small group of epileptics treated on lines directed exclusively to the relief of the gastro-intestinal conditions found associated in these patients with the epileptic phenomena. To-day, thanks to Cuneo's researches, I find myself in a stronger position to press the importance of chronic intestinal stasis as a

* An address to the Tunbridge Wells Division of the British Medical Association, February 27th, 1924.

factor in the pathogenesis of epilepsy. I have had opportunity of studying in very great detail 27 cases of epilepsy. In all of these a full personal and family history was obtained, and each patient was examined, system by system, for indications or history of chronic toxic conditions. The blood, menstrual blood, urine, and stools were examined, and the condition of the uterus, urinary bladder, teeth, tonsils, nares, and sinuses investigated. Thirteen cases were *x*-rayed with bismuth meal and barium enema, and eight of these were operated upon for conditions of advanced stasis affecting the general health. In every epileptic examined the clinical and laboratory evidence was eloquent of considerable chronic intestinal stasis and widespread mucosal catarrh of the intestine, as described first by Lane. As in the early group reported, treatment has been directed in every case primarily to the relief of the intestinal condition.

Of the 27 cases examined, only 20 can be reported upon as still under my personal supervision, and of these 5 have not been sufficiently long under treatment to enable me to include them in any statement of results. I can, however, report on 15 cases sufficiently long under treatment to be included in such a return.

In 5 cases there has been complete arrest of epilepsy over a period of from one to three years; 3 other cases show immunity over a period which just fails to bring them into the same category; 3 cases show a lengthening interval and decrease in severity of the attacks; 3 cases, including one with some injury to the scalp from burns, show no improvement at all; one case died from pulmonary embolus following operation.

When it is remembered that bromides and luminal have been excluded from the treatment, and that the carrying out of my instructions has been in many and various hands, I think that I may fairly claim that the methods of treatment I have adopted have yielded results which go some way towards proving a close association between demonstrable chronic intestinal stasis and epilepsy.

The following points have emerged in the examination of cases:

The faeces were examined in all for intestinal parasites and their ova, with negative results. Fourteen cases showed undigested starch in excess, and practically all cases showed an acid reaction in the faeces. Bacilluria occurred in 15 cases, albumin in 4, sugar in 1, and the average total acidity of the 27 cases was considerably above normal. The blood pressure readings varied: under 100 mm., 4; under 110 mm., 2; under 120 mm., 6; under 130 mm., 5; under 140 mm., 2; 150 mm. or under, 4. So that the average was 121.4 mm. The pulse pressure averaged 43.2 mm. Of 11 females 4 showed definite goitre, and 4 marked amenorrhoea. Tonsils were found enlarged and septic, or had been already removed, in 12 cases. In one case a suppurating antrum had been treated. Sixteen cases gave definite evidence of chronic catarrh of mucous membranes other than the gastro-intestinal tract. Enuresis was reported in 4 cases; sleep-walking in 4; urticaria in 7; stammering in 3; migraine in 3; asthma in 1. A family history of epilepsy was found in 8; stammering in 8; asthma in 3; migraine in 3; urticaria in 2; chorea in 1. In no case was a syphilitic history obtained either in the patient or in the parents. In 2 cases the parents were first cousins. Congenital defects or malformations were found in 5 cases; undescended caecum in 1; maldevelopment of the genital organs 1; persistent deciduous teeth 1; hypoplasia of enamel 2; impacted molars 2; there was a personal history of active tubercle in childhood in one patient, and in one case the family history showed tubercle involving three members of the family, whilst in another case there was a family history of chronic alcoholism in the father.

The results of treatment generally have been, I think, encouraging; and if all the operational cases have apparently not done better than the unoperated group, it must be remembered that these were cases calling definitely for operation on the grounds of intestinal stasis alone, and, further, that with the two exceptions where colectomy was done, the removal of a controlling appendix and acquired bands or adhesions still left the oedematous, turgid, congested, and perhaps denuded mucosal surfaces for after-treatment. Were not colectomy so dangerous an operation I should be inclined to resort to it more frequently in epilepsy, but as a general rule the treatment of cases not operated on, or otherwise operated on, is necessarily prolonged, and results cannot be expected at once in cases of long-standing chronic mucosal catarrh. Yet the immediate cessation of epileptic attacks from the date of operation in several cases has been a very striking experience.

There is much to investigate in every individual case, besides the degree of involvement of the colonic tube. The extension of the chronically catarrhal and infective processes to the duodenal and upper jejunal area, and to the stomach, is a common feature in all cases of intestinal stasis at all advanced, and it is this extension which links my observations with those of Cuneo. I believe that the leaking septic tank is the first cause of epilepsy, and that the later involvement of the small intestine and liver in chronic intestinal stasis is the next step towards the failure of the alkali reserve which Cuneo has described. And I further believe that the graver the involvement of the mucous membranes of the body generally, but particularly of the colon, in the chronic catarrhal processes, the greater the output of organic acids and the more profound the demineralization of the tissues and cells of the body. Acidosis is the feature of epilepsy, and is associated with persistent acidity or hyperacidity of the faeces and urine. In the presence of such an acidosis the destruction of the nucleo-histone *of mucosal cells* is constant and widespread, and proteosaemia results on a large scale independently of the actual pressure of organic acids in the blood stream itself. I am confirmed in this view by the constancy with which my patients attribute their attacks to indigestion, to constipation, or to the presence of offensive stools, and by the good results of a return to sound habits of colonic hygiene. It is also my experience that the more chronic and extensive the colonic catarrh the more grave the epilepsy in severity and frequency. Moreover, the more rigorously the system of treatment is carried out the more rapid and complete the improvement. This treatment is directed to the restoration of the function and amenity of the gastro-intestinal tract, and particularly to the reduction of the septic catarrhal process; but no treatment will prove successful which does not also provide for a vitamin-rich diet, for remineralization, for endocrine and general hormone reinforcement, and for the removal of septic processes wherever recognized. Where surgical relief of stasis is obviously necessary it must be carried out.

The part played by heredity is still a matter of dispute, but the figures I give in my own small series are sufficiently striking, not alone for epilepsy, but for the closely allied explosive conditions — migraine, stammering, chorea, asthma, and urticaria. Sargent reviewed over 18,000 cases of cranio-cerebral wounds with skull defect resulting from war injuries. Of these about 800 only, or 4.5 per cent., developed epilepsy. I have, in the last five years, made a complete clinical and laboratory examination of no fewer than 500 cases of typical chronic intestinal stasis; yet of these only 27 have shown any signs of epilepsy—say 5 per cent. In these 500 cases are many showing varying degrees of other nervous conditions—nervous exhaustion, phobias, borderland cases, dementias, sclerosis, etc. But, unless the vulnerability of the cortex to certain specific toxins in certain individuals or families is accepted, we have no other explanation for the very occasional appearance of epilepsy in a condition so common as acidosis. All our present experimental methods of inducing epileptiform convulsions in laboratory animals—as faradization, artificial anaemia or acidaemia, painting the cortex with epinephrin or proteoses, etc.—fail to explain the general immunity of the vast majority of people to the epileptiform convulsions so induced in laboratory animals. I, too, like Professor Osnato, am convinced that it is on the lines of Cuneo's work that the great advance is to be looked for. My own work on stasis offers, as explanation of the failure of starch reduction in the small intestine which he has described in epileptics, the fact that extension of the catarrhal processes to the upper small intestine from the colon is due to mechanical obstruction at the ileo-caecal entrance and at the duodeno-jejunal junction secondary to overloading of the static colon. A further factor must surely be the subversion of the hepatic functions by the high acid and toxin content arriving by the portal channel. There is, however, this also to be said: the destruction of mucosal cells in the colon on a wide scale in stasis releases into the vascular system toxic agents, which, coming from such an origin, must have a specific affinity for mucosal cells at a distance. Only thus can we explain the frequency and the chronicity of catarrh of remote mucous membranes—nasal, bronchial, uterine—which is so constant a feature in chronic stasis cases, and

which proves so intractable until the main colonic reservoir of these toxins is overhauled and repaired. Closer study of the leaking septic tank will yet yield a most fruitful contribution to medical science, and a further step to the solution of many problems hitherto accepted as insoluble. These will almost certainly include a large proportion of chronic functional disorders within the province of neurology and psychiatry, and with them the problem of epilepsy will certainly be advanced definitely nearer to complete solution.

I have to acknowledge gratefully the loyal support and co-operation of the many general practitioners who have carried out my suggestions in treatment, and the staff of the various hospitals and homes where operations have been performed. To Dr. A. C. Jordan and to Sir W. Arbuthnot Lane especially my thanks are due for the great skill and interest they have shown in the *x*-ray and operational sides of the work.

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British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924.

SECTION OF LARYNGOLOGY AND OTOLOGY.

W. JOBSON HORNE, M.D., President.

IMPORTANCE OF EARLY TREATMENT OF ACUTE OTITIS.

BY

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EVEN in comparatively recent years amongst the general public there was a tradition, which has not yet died out completely, that ear affections are incidents in the lives of individuals, largely controlled by age periods, such as seven or fourteen years, at which times those afflicted were supposed to "grow out of it." It was believed that ears which discharged were safe whilst they continued to do so, on the principle, I suppose, that it was "better out than in," and became dangerous only when the discharge ceased to appear. Pain in the ear was to be soothed by poultices or laudanum drops, until discharge made its benign appearance to relieve the patient's distress, after which the condition was frequently left to *vis medicatrix naturae* and the doubtful consolation of "growing out of it." All this is being gradually changed, and I look to the various child welfare centres and clinics now at work to dispel finally this *laissez-faire* attitude, but they need guidance from some authoritative source on the present otological view of the whole subject. It should be the object, if not the express duty, of meetings of this kind to take a large share in such educational work.

The importance of acute otitis, whether catarrhal, inflammatory, or suppurative, can be put in many ways to convey its true significance to those members of our profession not immediately concerned with the specialty of otology; but I hope you will not consider it is overstating the case to say that fully 90 per cent. of the common and most serious ear affections come within its ambit, if we include all the possible complications and sequelae of otitis media. The term "acute otitis" may be appropriately applied to any acute inflammatory or suppurative process arising in any portion of the organ of hearing, whether external, middle, or internal ear; however, in the usages of everyday practice we limit the term to affections of the external and middle ear only and refer to those of the inner ear as labyrinthitis, though the latter is due to an extension of disease from the middle ear or its adnexa, with the one exception of cerebrospinal fever. External and middle ear inflammation expose the function of hearing to the risks of partial or complete destruction; their complications and sequelae not only intensify these risks but are frequently dangerous to life, and sometimes prove fatal. Acute otitis of the outer ear usually takes two forms, the circumscribed and the diffuse, the former being the more common. Neither is dangerous to life, but may be to hearing, since if neglected or not treated with care perichondritis of the pinna and cartilaginous meatus may set in, terminating in necrosis and occlusion of the passage. Circumscribed external-ear inflammation with its associated oedema in many cases assumes a special significance, inasmuch as it may be confused with mastoid extensions of middle-ear infection. This is a pardonable mistake for the inexperienced to make at times, the error being less serious if the grave condition is diagnosed for the simpler than vice versa.

When we come to consider an acute affection of the middle ear the gravity of the outlook is very different, since an acute inflammatory process in such a small air chamber, clothed with a vascular lining, and containing a delicately jointed bony mechanism for the conduction of sound, constitutes a dangerous menace to the function of hearing. If the middle ear were a cavity constructed on the lines of the antrum of Highmore, one would expect an inflammatory infection of its lining to be self-limiting and ending in nothing more serious than an empyema, capable of easy drainage and cure; but the possibilities of extension of disease from the middle ear to the cranial cavity through the labyrinth, or by the mastoid antrum and air cells to the meninges and lateral sinus, are so very real that no effort should be spared in combating the earliest manifestations of the infection to cut short the attack.

Let me briefly recall the formidable array of possible complications and sequelae of acute otitis to emphasize the claims made for the importance of the subject and the need for its early and proper treatment.

1. Acute otitis externa: Perichondritis; necrosis of cartilage; occlusion of meatus; deformity; and deafness.
2. Acute middle-ear catarrh: Eustachian block; impaired ventilation of middle ear; retraction of membrane; impaired movements of ossicular chain; tinnitus; chronic middle-ear catarrh; various grades of deafness; progressive deafness; and internal-ear deafness.
3. Acute purulent otitis media: Acute suppurative mastoiditis; lateral sinus thrombosis; extradural abscess; brain abscess—cerebral or cerebellar; acute labyrinthitis—diffuse or circumscribed; and purulent meningitis.
4. Acute serous labyrinthitis.
5. Acute diffuse suppurative labyrinthitis, which may cause extradural abscess, cerebellar abscess, purulent meningitis, lateral sinus thrombosis.

In addition to these intracranial lesions there are many possible intratympanic ones, such as:

1. Perforation, and partial or complete destruction, of the drumhead, depriving the tympanum of its air-cushion effect in the conduction of sound, and exposing the cavity to a new route of infection.
2. Arthritis and fixation of the ossicular chain with impairment of mobility.
3. Necrosis of ossicles with destruction of their function as a conducting mechanism; probably the commonest intratympanic cause of middle-ear suppuration.
4. Ulceration of tympanic lining with caries of bony wall and formation of polypi.
5. Scarring and adhesions in the tympanum, impeding the conduction of sound and the drainage and ventilation of the cavity, increasing the difficulty of rendering it free from sepsis, and also making it more prone to fresh infection.
6. Necrosis of the posterior tympanic wall, invasion of the Fallopian canal, with neuritis and paralysis of the facial nerve.
7. Various grades of deafness.
8. Deaf-mutism.

Over 60 per cent. of all ear diseases are middle-ear diseases. Apart from the personal affliction, deafness has a large economic side. The partial or complete destruction of such an important educational portal as that of hearing deprives the person of the power to acquire knowledge by sound, with two obvious results: (1) incomplete and inefficient education; (2) inability to fill occupations where communication

by sound is an essential qualification, which means nearly every walk of life. There is the further economic handicap that insurance companies debar persons with certain chronic ear affections.

So much for the importance of acute otitis as measured by its ravages; now for the urgency of early treatment. Details of treatment are outside the scope of this discussion, but if it is to bear any fruit we must give some indication of a better line of action than the old expectant attitude.

We must begin with the young. Hearing in children is very acute and far in excess of their needs, so that any deafness indicates a serious lesion and requires immediate attention. The foundations of deafness are laid in childhood and even in infancy. In an aural clinic one is constantly coming across tympanic membrane or cavity lesions of a gross character, of which the possessor or those responsible for his or her health in early life have no history to give. The obvious inference is that an acute ear trouble occurred at an age prior to the patient's recollection, probably in association with some other serious illness, and was not observed by the parents or the medical attendant. Such cases could not occur if we followed the dictum urged by Kerrison, when he says that "he firmly believes the routine practice of examining the ears of all sick children would prevent not only much unnecessary suffering but also some loss of life."

When lesions of a suppurative nature, the sequelae of acute affections with outstanding symptoms, can escape notice in this way, what chance of receiving early attention have the mild onset and changes of middle-ear catarrh? Yet from the number whose impairment of hearing results from a simple middle-ear catarrh, so common in incidence, insidious in onset, and progressive in deleterious action, without any compelling symptom to send the patient for early advice, we know that it is far more serious as a cause of deafness than the acute suppurative conditions. Acute affections attended by pain or discharge will always claim their meed of attention and early treatment, but by the time that middle-ear catarrh has revealed itself by its only manifest symptom, deafness, the earlier stages will have long passed over.

When I was aural surgeon at the Evelina Hospital for Sick Children some years ago I made a point of examining the ears of every child brought up for the tonsils and adenoids operation, independently of any history of deafness or earache, and noted any changes to be seen in the drumhead. Every child who was prone to recurring colds and had a moderate or large amount of adenoids or large tonsils showed membrane and middle-ear changes, even without any question of deafness. These manifestations of middle ear infection are, in my opinion, the forerunners of many of the non-suppurative cases of deafness so frequently met with in adult life and for which we are unable to find any cause in their recent history. Any alteration in density, colour, lustre, or cone of light promptly settled my decision in favour of operation for the removal of tonsils, if large or septic, adenoids if present, and the necessary treatment of the nose if obstructed. These alterations in the appearance of the membrane one has interpreted as evidence of intratympanic infections, and the retraction as an indication of impairment of ventilation of the middle ear cavity. Only a routine examination of the ears in all children will enable us to get at the early treatment of middle-ear catarrh so as to prevent the deafness which follows years later on tympanic infections in childhood.

If a procedure of this sort were adopted I feel that the incidence of non-suppurative deafness in adult life would be very materially mitigated, and otologists would escape much of the reproach that "they can do so little for this form of deafness," when as a matter of fact much of it, which is impossible to cure when fully established, could have been prevented.

Now for the early treatment of the more acute conditions, which for practical reasons I will group as follows:

1. Deafness and pain with hyperaemia of the membrane, indicating a tympanic infection and acute inflammatory reaction.

2. Deafness, pain, hyperaemia, and bulging of the membrane, the serous secretory stage of No. 1.

3. Acute middle-ear suppuration, the purulent stage of No. 2.

4. Nos. 2 and 3, with suspected mastoid antrum infection.

Our position here is not clear, and we are faced with a problem similar to that which confronted general surgeons some years ago with regard to appendicitis—namely, were cases to be treated on purely medical or surgical lines or when was surgery indicated? At that time a well known surgeon made the arresting statement "that a man suffering from appendicitis was in as grave danger as if he were sleeping on the brink of an active volcano." Osler, as far back as 1895, in his textbook said, "There is no medicinal treatment of appendicitis." I am convinced that every surgeon of experience will grant the applicability of Osler's assertion in the case of mastoiditis; but how about acute middle-ear suppuration with or without mastoid antrum infection? Is the treatment to be medicinal and for how long, or, if surgical, how soon and what form should it take? These are questions on which we must make up our minds for the guidance of those who are brought into contact with the cases in the first instance.

Should the removal of tonsils and adenoids be regarded as an essential part of early treatment, and how soon after the onset of middle-ear suppuration ought the operation to be performed? Shall we drain the tympanum surgically, and, if so, should this be through the meatus only or in addition, when cases show no definite signs of mitigation of discharge or improvement in hearing, resort to post-auricular drainage through the mastoid antrum? The results of the latter procedure have been so uniformly satisfactory in early cases of mastoid with middle-ear suppuration in promptly arresting the tympanic condition that its ease of performance and freedom from risks in the hands of any skilled person should commend its early adoption, even in the apparently uncomplicated cases of otorrhœa, long before these could pass into the chronic stage.

DISCUSSION.

Dr. PETER MACDONALD (York) expressed the opinion that there was urgent need for inducing the general practitioner to recognize that delay, sometimes only of hours, in active treatment of acute otitis media was dangerous. No general practitioner was competent to deal with a condition which might be acute otitis media unless he was able not only to examine the ear with thoroughness—often a difficult matter—but also to make an immediate decision whether operative interference, such as myringotomy, was called for.

Sir MALCOLM WATSON (Federated Malay States) emphasized the fact that although the discussion was being carried on by specialists their words would go out to general practitioners, to whom this was a most important subject.

Dr. WILLIAM HILL (London) pointed out how necessary it was to instruct the general practitioner how to examine the ear properly. He thought that school medical officers did not examine the ear *qua* ear so well as they ought to do, in contradistinction to their care in examining the throat and nasopharynx for enlarged tonsils and adenoids.

Dr. J. S. FRASER (Edinburgh) said that the differential diagnosis between furunculosis of the meatus with retro-auricular swelling on the one hand, and mastoiditis from otitis media on the other, was difficult, not only for the general practitioner, but also for the specialist. He himself had made mistakes on several occasions, but he thought that if diagnosis was difficult or impossible it was better to treat the case as one of the more serious condition and to open the mastoid. It was remarkable how many people had forgotten that they had ever had middle-ear suppuration, and supposed it was due to the fact that none of them could remember things that had happened during the first four years of life. He called attention to the fact that some cases of acute suppurative otitis media went on to meningitis at a very early date, even when there was no

labyrinthitis. In such cases it was difficult to be sure of the route of infection. It might be by way of the blood stream; thus, in the presence of otitis media the organisms in the blood settled down in the subarachnoid space and produced meningitis. On the other hand, the infection might pass by way of the fossa subarcuata from the inner wall of the mastoid antrum beneath the dome of the superior canal to the posterior fossa. Dr. Fraser also called attention to the economic incidence of chronic middle-ear suppuration. This was very frequent in hospital practice and rare in private practice; the reason was that wealthier and better educated people did not allow an acute middle-ear suppuration in their children to become chronic—they had it efficiently treated when it was acute. Dr. Fraser did not advocate paracentesis before bulging of the drumhead (stage 1); carbolic and glycerin drops should be used along with general treatment. After suppuration the dry method should be recommended, at least in hospital practice, and even in private work if the mother or nurse were competent.

Dr. W. H. KELSON (London) thought that when the general practitioner saw a red swelling at the end of the meatus he ought to recognize that that case had passed out of his hands into those of the specialist.

Mr. C. A. SCOTT RIDOUT (Portsmouth) believed that this question was not taken seriously enough by the general public, especially in schools—not only elementary schools but public schools. He thought the idea held by many general practitioners that a running ear should not be syringed ought to be combated. The general practitioner should be taught that an acute middle ear inflammation required the surgeon as much as did an acute appendix.

Dr. F. H. WALLACE (Uppingham) suggested that Mr. Scott Ridout's views were unnecessarily gloomy as regards the public schools. He knew from personal experience that aural conditions were certainly taken seriously, not only by the medical officer, but by the matron and others responsible.

Dr. NEIL MACLAY (Newcastle-on-Tyne) said that with regard to the first stage of acute otitis media he was of opinion that early incision of the drumhead was of the greatest importance, and so long as one was satisfied that the condition was middle-ear inflammation, and not simply a myringitis and part of an external otitis, he thought the membrane should be incised prior to evidence of bulging. In those cases where there was a post-auricular swelling, and where there was difficulty in determining whether that condition was due to mastoiditis or furunculosis, he thought it was better to expose the bone, and be prepared to proceed to the opening up of the mastoid end area if necessary. *X*-ray examination in those cases might give valuable assistance in arriving at a correct diagnosis. When discharge had taken place in the acute ear he was in the habit of treating the case by the wet method. He advocated syringing out the ear canal in order to remove discharge and debris, so that drainage might be facilitated. Epithelial debris was very apt to accumulate in such a way as to block up the opening in the drumhead, and it seemed to him that the only way by which this debris could be successfully removed was by means of the syringe. The risk of introducing fluid into the middle ear need hardly be considered when one remembered the relatively small size of the perforation and the condition of the middle ear cavity resulting from its swollen mucosa.

Mr. F. HOLT DIGGLE (Manchester) thought the question of an early paracentesis in those cases which presented a congested membrane but no bulging was a difficult one to decide. All of them had had cases cured without paracentesis. The density of the membrane had so much to do with determining whether there was early bulging or not. Dense membranes resisted bulging for some considerable time, and Mr. Diggle considered that the all-important point was pain. In his opinion, if pain persisted for forty-eight hours without bulging the membrane should be incised. The fortunate cases as regards preservation of hearing and early cessation of discharge were those which presented an early mastoid abscess, since the mastoid was of necessity opened early. They were all familiar with the good results obtained in these cases; such good results should not deter them from opening and draining the mastoid antrum in cases where the otorrhoea persisted in spite of skilful early treatment. Mr. Diggle found it very difficult to decide clinically whether the mastoid was involved in those cases of profuse persistent otorrhoea without any tenderness or pain over the mastoid. He had not found *x* rays of much value in deciding this question, and therefore considered that in these cases the mastoid should be opened and drained if there was no improvement after ten days. If the mastoid was not opened these cases lingered for several weeks and perhaps ultimately cleared up, but almost invariably with some impairment of hearing if not a permanent perforation of the membrane. He believed that the bacterial type of infection was important, as he had found that practically all streptococcal and influenzal cases required early drainage of the mastoid antrum even when the usual external signs of mastoiditis were absent.

Mr. DUNLOP thought that syringing was good treatment if performed properly; but the ordinary syringe used by the patient was a bad one for the purpose, especially in unskilled hands.

Mr. H. BELL TAWSE (Nottingham) said that he rarely performed paracentesis of the drum, his first association with the case being usually after the drum had ruptured. Enlargement of the perforation for defective drainage was occasionally necessary. In the cases with free discharge, no pyrexia, no pain, no mastoid tenderness or swelling, and no adenoids, he advised very frequent fomenting of the inflamed drum with the warmest sterile water the patient could bear, using a medicine dropper, not a syringe. In the intervals hot fomentations, either wet or dry, were applied to the auricle and mastoid. One could imagine syringing at high pressure causing mastoid involvement; the medicine dropper obviated this. He treated an inflammatory process in this locality in exactly the same way as one in other parts of the body—namely, by the application of heat; and the wet method seemed the only way to get heat to the drum and possibly to the middle ear. How long was the discharge to be allowed to persist? With no marked improvement from treatment he advised opening and draining the antrum at the end of a fortnight, and he had been well satisfied with the results. The difficulty was to persuade the patient or his parents to allow operation; so many of their friends' children had had discharging ears all their lives and seemed none the worse. If there were adenoids he advised immediate removal, and in most of the cases the discharge ceased without antrotomy.

Dr. RITCHIE RODGER (Hull) said that in discussing the treatment they seemed to be forgetting a most important item—in his opinion the most important: 95 per cent. at least of these cases were due to adenoids in the case of children, and to nasal obstruction in the case of adults. In children, he thought they must remove the adenoids, if they were allowed to do so, as the initial part of the treatment. It was not a severe operation if the tonsils were left untouched. In Class 1 he did the adenoid operation alone, in Class 2 adenoids and paracentesis, and in Classes 3 and 4 adenoids and paracentesis if the perforation was not large enough or properly situated for effective drainage. Even where there was distinct tenderness and oedema over the mastoid process these symptoms very frequently subsided after removal of adenoids and paracentesis.

Mr. DONALD WATSON (Bradford) mentioned those cases of mastoiditis without perforation of the drum. In acute otitis media sometimes he incised the drum, sometimes he did not; he was still uncertain which was the better method of treatment.

RADIUM THERAPY IN CANCER OF THE OESOPHAGUS:

THE RESULTS OF FIFTEEN YEARS' EXPERIENCE.

BY

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[*Condensed Report.*]

MALIGNANT strictures in the thoracic gullet may, for practical purposes, be regarded as absolutely outside the limits of radical surgery. They are rarely diagnosed in the early stages when the growth is of small extent and has not passed beyond the actual limits of the gullet, and, even when diagnosed by oesophagoscopic examination as thus limited, the operation of lateral thoracotomy is so fatal as not to be worth attempting. It is true that Torek of New York had a recovery from the immediate operation with survival for one year, but the fact remains that thoracotomic excision of a portion of the gullet is probably the most unpromising operation proposed in surgery from the point of view of death within a week or so of its performance.

We are usually reduced to palliative measures to give functional relief, either by enlarging the strictured lumen, or else by resorting to gastrostomy for the relief of impending starvation when endo-oesophageal measures fail. *X*-ray therapy and the injection of serums, animal extracts, and chemical substances—for example, metallic colloids—are usually disappointing.

The local means at our disposal for relieving the stricture are various, and include:

1. Dilatation of the narrowed lumen by the passage of bougies passed blindly, or by immediate graduated bougieing carried out with the aid of the oesophagoscope.
2. By means of some form of intubation—for example, by Symonds's funnels or some modification of them (including Guisez's, Hill's, and Souttar's), or by long oro-oesophageal red rubber tubes, styletted or otherwise, and inserted through the oesophagoscope.
3. Perendoscopic removal of portions of protruding soft fungating growths by means of snares, of punch forceps, or of rasps (Mosher and Brüning).
4. Superficial tissue destruction and reduction by galvano-cautery (ineffectual) or by surgical diathermy (Mollison).
5. Attempted diminution of the growth by endo-oesophageal surface applications of radium salts, or of radium emanation contained in metal cylinders, which latter also act as screens to cut off the more violently destructive rays which cause almost immediate necrosis and which are dangerous in extent of action.

Radium radiation, like most therapeutic measures, is unfortunately uncertain in action: some malignant formations are much more affected by radiation than others—sarcomas, for instance, speaking generally, being as a rule much more susceptible than carcinomas, and the softer forms of carcinoma more readily affected than the harder growths; hence fungating lesions generally yield much more efficiently than non-fungating. This does not mean, however, that hard, non-ulcerating squamous epitheliomas in the gullet never react well to radium rays, as occasionally they do, but the expectation is less promising.

As radium therapy of the gullet implies a long exposure and necessitates the retention of an uncomfortable, almost rigid radium apparatus for many hours, it follows that, in advanced cases, where the patient has been reduced to a low state of debility, radium therapy is contraindicated. An acute and sometimes fatal toxaemia may be set up, exceptionally in cases which do not appear to be far advanced and the general health only moderately lowered, by the liberation of massive doses of toxins into the blood stream; but this is much more likely to occur in advanced cases with an extensive and ulcerating lesion in the gullet. A careful selection, as far as it can be made, is therefore imperative.

A growth involving the gullet behind the trachea or the left bronchus is usually unsuitable for radiation if a careful tracheo-bronchoscopic examination demonstrates that the growth has permeated the party wall and presents in the air passages; and if employed at all in this region it should be used with caution, in order to avoid prematurely bringing about a communication between the gullet and air passages. This happened in at least one of my cases, previously recorded, though the patient survived for nine weeks on account of the protection afforded by a Symonds funnel, which in this case effectually prevented liquid nourishment and swallowed secretions from entering the air passages. The diagnosis of perforation of the party wall is easy, as violent coughing and ejection of fluid ensues within a quarter of a minute of swallowing water.

It should be sufficiently obvious that it is a *sine qua non* in radium therapy of a malignant stricture to make fairly exact observations and measurements of the nature and extent of the lesion, especially longitudinally, and to *radiate the whole extent of the growth* as far as is practicable, superficially at all events. But let us suppose that an inexperienced individual orders a radium emanation apparatus from a radium institute, specifying a strength of emanation equivalent more or less to 100 mg. of radium bromide, and that he receives a styletted silver cylindrical container, the latter being, say, 1 mm. thick and 4 cm. long. Now it must not be assumed that the whole length of the cylinder, or three-fourths, or even one-half of it, is uniformly radio-active; if the styletted top of the cylinder is unscrewed and the contained capillary glass emanation tube removed, it may quite likely be found that the latter is approximately 1 cm. in length. If one application only of this apparatus is made for, say, fifteen or more hours to a malignant stricture 3 cm. or more in length, it stands to reason that only a moderate portion of the stricture is efficiently radiated—depending on the position in the cylinder of the active capillary tube. Failure to obtain any marked relief after such a procedure is only to be expected unless the active portion of the apparatus happens to be *vis-à-vis* the tightest portion of the stricture, when some moderate improvement might result. The whole length of the stricture must be radiated.

In my early hospital and private cases, and in many of my later private cases, I had the advantage of using Dr. Finzi's radium apparatus with a longitudinal radio-active efficiency of either 2.5 or 3 cm. With such an apparatus a stricture of about 1 inch long could be radiated by one application, whereas in strictures double or treble this length two or three applications must be immediately and successively made to successive lengths of the stricture if the lesion is to be anything like efficiently radiated.

In ordinary emanation therapy for a stricture, say, 3 cm. long the capillary emanation tube should be 3 cm. long, and it is most conveniently charged with the emanation equivalent of at least 150 mg. of radium bromide—that is, 50 mg. (approximately 25 millicuries) to each centimetre of length of the capillary tube. If the metal be silver and 1 mm. thick this amount of radio-activity forms a useful standard for an applicator, but the application can be tolerated and must be applied longer than if, for instance, there is the emanation equivalent of 100 to the centimetre.

Anyone embarking on radium therapy in the gullet must at least be prepared first to arm himself with information as to the character, breadth, and length of the stricture. A certain amount of useful information may be obtained by a study of the fluorescent screen phenomena observed during the swallowing of paste of barium or bismuth salts, which are opaque to the Roentgen rays, and also by the examination of an *x*-ray print, which should always be taken.

A skilfully carried out endoscopic examination under general anaesthesia, however, gives the most accurate information which is attainable of the surface appearances, and allows fairly exact measurements to be made of the extent of the growth from above downwards. This examination is facilitated by the use of large tubes of 18 mm. diameter.

The question of dosage is most important and complicated, as several varying factors necessarily enter into consideration. Thus we have to take into account in using cylindrical applicators in the gullet:

1. The *radio-active dose* for each centimetre in length reckoned as the equivalent in milligrams of radium bromide (according to the British custom).
2. The *screen dose*, according to the thickness and density of the screen employed—for example, whether silver, platinum, lead, or gold; a platinum screen, for instance, can be applied much longer than one of the same thickness of silver which is less dense; 1 mm. in thickness of the latter is employed by the Radium Institute.

3. The *time dose*, which necessarily has to be adjusted to the radio-active dose per centimetre and to the screen dose; with a screen of 1 mm. thickness of silver, fifteen hours is a usual time for doses with a radio-activity equivalent to 50 mg. radium bromide to each 1 cm. in length.

4. The *repetition dose* is the time which should elapse between one thorough application to the growth and its repetition. In this country the practice of allowing an interval of at least six weeks, according to the teaching of Dominici, is followed by the best radio-therapeutic practitioners.

So far back as 1909 I used an apparatus with a long, slightly flexible silver style attached to the proximal end of the cylindrical radium retainer. The style protrudes from the mouth after the radium cylinder has been accurately adjusted to the desired position in the strictured area, and the style is then bent so as to form an acute bend at the angle of the mouth, and is then secured to the surface of the cheek or even around the auricle by firm strapping. Previously, for the comfort of the patient, the style is likewise bent behind the fauces, so forming a pharyngeal angle; great care being taken in doing this not to draw the cylinder up out of its place in the stricture.

In February, 1911, I reported in some detail to the Medical Society of London twenty-one cases of malignant stricture of the gullet treated by radium therapy. In three patients there was total temporary local disappearance of naked-eye evidence of growth.

In one of the three patients, a female, eight separate radium applications were made in the course of two years, during which time she put on 2 st. in weight and remained free from any subsequent local macroscopic evidence of recrudescence of the growth for a further period of no less than five years from the date of the last application. An endoscopic examination with negative findings was made in the gullet on many occasions up to two months before she died, when she was obviously suffering from secondary growths in the liver and abdominal glands. The primary tumour, if not microscopically cured, at least was greatly attenuated, and activity of the growth was arrested for no less a period than five years subsequent to two years' radium treatment. Fibrotic tissue contractions, with diminution of the lumen following radium, necessitated occasional graduated bougieing.

The next best case, which I reported in 1911, was that of a man whose fungating growth had apparently vanished after one application only of Dr. Finzi's radium; the patient put on 1½ st. in weight in two months, and his swallowing became normal. It was with difficulty he was persuaded to submit to a further prophylactic application four months after the first, as he was so well. He was a carpenter by trade and went to work in the country, and failed to present himself at hospital until three years and one month after the first application of radium. He then complained of a slight amount of returning dysphagia, although he was then 3 st. heavier than when first treated. There was evidence of some recrudescence of growth seen with the oesophagoscope, it being as before of a soft fungating character, and bleeding profusely when touched with the end of the endoscope. He was again radiated, but died a few months later from invasion of the lungs leading to frequent haemorrhages. He swallowed ordinary food fairly well almost to the end, but was rapidly losing flesh.

Another man, reported on in 1911 as being free from gross evidence of growth on endoscopic examination, had six prolonged radium applications at intervals during twenty months, the malignant stricture extending nearly the whole length of the supraclavicular portion of the gullet. The applications in this case could be made, and were made, both externally and internally in this region. He put on 2 st. in weight and remained free from gross evidence of growth in the gullet for nine months at least. He lived for two years and nine months after the first application of radium, swallowing nearly normally to the end; death was due to a sudden profuse haemorrhage, though whether this originated in the primary lesion in the gullet or from a secondary one in the air passage was not determined, as the patient died suddenly at home in the suburbs and there was no *post-mortem* examination.

Of my 21 cases reported in February, 1911, there was temporary gross local disappearance in no less than 3 cases; there was remarkable improvement, both objective and subjective, in 7 cases, substantial temporary improvement in 7 other cases, and no improvement whatever in 4 cases.

I have now dealt altogether with seventy-seven cases of malignant stricture in the gullet by radium. Not all of the later cases were so carefully selected as those in the first series already reported, as in some instances the patient and his medical attendant urged that radium should be used, on the off-chance, after appreciating the caution that improvement was very problematical and the risk by no means negligible.

The number of applications varied in individual cases from one to eight. Two-thirds of the cases had more than one application. I have alluded above to three cases in my first published series (which overlapped in time into the second series) in which there was apparent gross disappearance of growth for from two to no less than five years. I have had at least four further cases in which there was apparently a temporary local disappearance of gross evidence of growth when the diseased area was visually examined with the aid of the oesophagoscope. The temporary freedom from recrudescence of growth lasted in these four cases for from six to eighteen months.

To sum up my results of radium therapy: in about one-third of the cases there was remarkable improvement, in another third there was very substantial improvement, and in the remaining third the improvement was either very slight and fleeting or there was either no improvement at all or the patient was rather worse than before. In three cases the measure was followed by fatal results within a few days of the application.

I have only included in my series malignant growths which were obviously primary in the gullet; extensions to the gullet from the deep pharynx, from the thyroid gland, from the mediastinum, and from the stomach have been deliberately excluded.

SOME OSSEOUS GROWTHS OF THE NASAL AND ADJACENT BONES.

BY

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[*Abstract.*]

THE first condition dealt with was leontiasis ossea. Virchow originally applied this title "leontiasis" to certain bony growths which he erroneously considered were analogous to elephantiasis of the soft tissues. The disease had been considered to be a variety of osteitis deformans and also of acromegaly, but differed from the former in affecting the face, and from the latter in having apparently no connexion with the pituitary region. Leontiasis ossea generally began in youth and gradually. It appeared to be due to some kind of inflammatory process, but no microbic cause had yet been established. Its actual point of origin appeared to be in some part of the nasal cavity. Professor Knaggs had divided the disease into two varieties: in the first it took the form of a slowly spreading periosteitis, and in the second of a profuse osteitis. In the periosteal form the disease appeared to be unilateral in origin; the nasal cavities might gradually become filled with bone masses, both septum and turbinates being affected. Nasal obstruction was generally one of the earliest signs. In the second variety—namely, profuse osteitis of the bones of the face and skull—there was no periosteal bone deposit, but the bone became generally swollen as though it were inflamed, and on section was found to be reddish, softer, and more vascular than normal, with occasional hard patches of dense bone. The skull bones were often enormously thickened, old bone being replaced by new. Sometimes the osteitis was not diffuse, but limited to one or two bones, especially the frontal bone or one of the jaws. In many of these cases there was also dental caries—a condition associated with osteitis fibrosa by Professor Knaggs. Mr. Kelson gave details of a few cases in which the condition of the nasal cavity had been specially mentioned. In the first case, reported in the BRITISH MEDICAL JOURNAL in 1896 by Young of Bristol, the patient developed painless and symmetrical bony bosses on the superior maxillae at the age of 39; there was no family history of this affection. Two years afterwards mental changes necessitated confinement in an asylum; later the sense of smell disappeared, the vision became weak, and exophthalmos and ectropion appeared. The patient died seven years after the appearance of the first signs. The nasal cavities were filled with bony masses, the frontal sinus and maxillary antra were occluded by bone, and the orbital cavities reduced in size, the bone being cancellous in structure. The sella turcica was normal and the pituitary body unaffected. In 1908 Mr. Kelson had shown a case at the Royal Society of Medicine; this patient, a man, had for eight years noticed bony swellings in the region of the nasal processes of the superior maxillae, with increasing difficulty in nasal breathing. The nasal fossae were blocked by enormously enlarged inferior turbinals; the septum was unaffected, but there were also bony bosses on the mandible, maxillae, and frontal

bones. There was no pain, nor evidence of syphilis, and no carious teeth were present. The nasal airway was cleared by operation, and the patient was subsequently kept under observation for two and a half years without any recurrence or increase in size of the bony bosses. In five out of eight cases described by Westmacott, at the International Congress of Medicine in 1913, carious teeth were found present, but their extraction did not cure the disease. The condition was unilateral, and the orbital and nasal cavities were not affected; the alveolar process was chiefly concerned, the antrum being largely invaded. In one case sarcomatous elements appeared to be present, but in no case did recurrence follow an operation. Westmacott did not regard these cases as leontiasis ossea, but believed them to be cases of osteitis fibrosa. Douglas Guthrie described two cases in 1923: the first was a smooth boneless swelling of the left upper jaw, in a girl of 16. In the second case the swelling of the upper jaw, in a child of 4, had been present since birth. Many points of resemblance existed in these various cases. A history of syphilis was rarely obtained, tuberculosis and malignancy were out of court, and staphylococcal or streptococcal inflammation seemed unlikely. Possibly some other bacterial infection or toxin was responsible, and Mr. Kelson urged practitioners to be on the lookout for early stages of such conditions in order to clear up the mystery concerning them. He then referred to bony growths in the upper part of the maxillae occurring in negroes, described by various authors, and concluded with the consideration of the genuine ivory-like osteomata occurring in the frontal sinus and orbit.

This paper will be published in the *Journal of Laryngology and Otology*.

The PRESIDENT expressed his indebtedness to Mr. Kelson for a paper dealing with a group of cases which had not received adequate attention from the standpoint of pathogenesis. As far back as 1899, when the sixth International Otological Congress met in London, all the known specimens of these osseous growths in the museums of the London hospitals were loaned to the Congress. The descriptive catalogue[1] of the Congress Museum afforded a useful record of the subject at that time. For obvious reasons it was difficult to obtain specimens showing the symmetry of some of these facial growths, but such a specimen was loaned by St. Thomas's Hospital.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

TWO OBSTETRICAL EMERGENCIES.

THE following account of two cases recently treated at the Dufferin Hospital, Calcutta, seems of sufficient interest to merit publication.

CASE I.

In March, 1923, an achrondroplastic dwarf, aged 19, with a markedly contracted pelvis, was admitted in labour at full term. Labour had commenced the day before admission, and she had had a great deal of inexpert examination and manipulation in her home. The bladder and intestines were very distended, the membranes had ruptured, and an offensive discharge was coming from the vagina. As delivery was practically impossible, even by craniotomy, it was decided to perform Caesarean section. A stillborn male child was removed by the abdominal route, followed by a very unhealthy placenta and ragged membranes. The interior of the uterus appeared so unhealthy that it was swabbed with iodine before being sutured; this was done with a buried muscular layer of silk sutures, and the superficial peritoneal layer and the abdominal wound were closed in layers in the usual way. Recovery was uneventful.

Between fifteen and sixteen months later she was again brought to hospital in labour and at full term; labour had commenced the day before admission, though she had been warned to report at the beginning of the ninth month if she again became pregnant. She was rather collapsed, the lips and mucous membranes were blanched, and she was perspiring freely, though she showed no untoward restlessness. She complained of abdominal pain, especially when lying on her back and on any attempt at palpation. Vaginal examination showed that the cervix was dilated to admit two fingers, though no definite presenting part could be determined. The membranes were unruptured, and it was decided to perform Caesarean section at once. When the abdomen was opened and a few adhesions of omentum to the abdominal scar had been broken down I saw what appeared to be a thin-walled cyst; this was the child inside the intact membranes with the placenta free in the abdominal cavity. This was removed, and the uterus was found to have ruptured in the line of the old scar and to have contracted down after having completely extruded its contents. Some large blood clots in the abdomen were removed. The child, a male, was stillborn. A pint of subcutaneous saline and of strychnine 1/60 grain were injected during the operation. The ruptured edges of the uterus were freshened and resutured, and the abdomen closed in layers, about half a pint of saline solution being left in the peritoneal cavity. The patient's recovery was uneventful.

The question arising was whether the rupture was due to pregnancy distending the uterus again so shortly after the first Caesarean section and while the scar was comparatively soft, or whether the sepsis present in the first confinement was a contributory cause. Moreover, was I justified, in the circumstances, in leaving her unsterilized, to risk the possibility of a repetition of these events should pregnancy occur again? I think I was right in so doing, since live children count so largely in the life of an Indian woman, and these two experiences have not daunted the patient, who still hopes to have a live child.

CASE II.

The history of this patient, a Hindu lady of high caste, was as follows:

Eight years previously she had been delivered of a stillborn female child by an Indian dhai. The afterbirth had given trouble, and the dhai had removed it manually, causing great shock and pain to the patient. Since that time the patient had had no children and came to me to inquire if there was any reason for this. On examining her I found that she had an inversion of the uterus which had probably existed since the first delivery. I gave a guarded prognosis, but promised to try to replace the uterus. For this purpose I took her into a private cottage in the hospital and treated her with four-hourly saline douches and applications of ichthyol to the inverted uterus, her bed being raised at the foot. After four days of this treatment I made the attempt of replacement under an anaesthetic. I fixed the anterior lips of the cervix with a tenaculum in my right hand and with my left hand in the vagina digitally compressed the uterus at the fundus, at the same time gently pushing it up through the cervix till half had gone up. When it seemed that I could do no more, my hand being almost paralysed, the fundus slipped up suddenly with a sucking noise—the replacement was complete, and the cervix contracted down.

In all, the operation took from twenty minutes to half an hour. No one was more surprised than I myself at the result, for I only undertook to try the replacement in order to satisfy the patient and her relatives. The after-treatment consisted of douches and keeping the patient in bed, with the foot of the bed raised, till the tenth day. Examination before she left hospital showed the uterus apparently normal in size and position; the fundus was palpable on bimanual examination where previously there had been no mass felt, and the bimanual impulse was normal. I have not yet heard whether she has since become pregnant.

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A CASE OF HYDATIDIFORM MOLE.

THE rarity of occurrence of hydatidiform mole renders the following details of such a case worthy of publication.

Two years ago I was called to a woman, aged 28, about five months pregnant, and apparently suffering from a threatened miscarriage. I administered an antispasmodic and gave the usual advice, believing that it was a false alarm. The next morning the labour pains increased, and the os uteri increased to the size of half a crown; her temperature was 100° F.

I left the patient in charge of a nurse. Later that day the labour pains became much more violent and closer together; I found the os largely dilated with a mass protruding from it.

With due precautions I removed this egg-shaped cystic tumour. It was followed in quick succession by a large number of similar cystic tumours, varying in size from a pin's head to a large hen's egg. I managed to curette the uterus with the fingers, and removed altogether slightly more than a gallon of these cysts. There was no sign whatever of a foetus. The chorion had evidently become absorbed into the roots of this bunch of "grapes." Some of the cystic moles near the os uteri had already undergone partial degeneration; this process probably gave rise to some septic absorption which accounted for the fever. The next day, as the patient's temperature had risen to 101.5°, I sent her to an infirmary, where, under an anaesthetic, the uterus was explored, and it was stated that "small pieces of membrane and placenta were removed by the fingers only." She quickly recovered and was discharged within a fortnight. It is interesting to note that this woman is again four months pregnant.

In the literature I have found mention of seventy-five cases of this kind, and one author states that the proportion of occurrence is only about one in a million pregnancies.

London. W. A. BOYD ROBERTS, M.D., C.M.McGill.

[1] Descriptive Catalogue of Museum of Sixth International Otological Congress. 1900. Compiled and edited by W. Jobson Horne and Arthur H. Cheatle. (Pp. 135-138.) J. and A. Churchill.

Reports of Societies.

COLLOIDAL COPPER TREATMENT OF CANCER.

AT a meeting of the Cardiff Medical Society on November 11th, the President, Dr. E. E. BRIERLEY, gave an address on the cancer problem.

Dr. Brierley first surveyed the history of cancer, which, though known to Hippocrates and Galen, and even earlier, was not seriously studied until about 1870, when Virchow appeared as the pioneer of cancer research. Collective cancer research started in this country with the reorganization of the cancer department of the Middlesex Hospital in the beginning of this century and the foundation of the Imperial Cancer Research Fund in 1902. Statistics showed that cancer mortality had trebled during the last sixty years, and that the age incidence was now later than formerly. Newsholme, in 1899, had shown that the average death rate from cancer then was 47 per 1,000, and that the highest mortality rate was 156 per 1,000 in chimney-sweeps. The experimental production of cancer in animals by irritants, of gastric cancer in rats by feeding them on cockroaches infected by the larvae of a nematode, *Spiroptera neoplastica* (Johannes Fibiger of Copenhagen), the transplantation of cancers in animals, and the continuous propagation of mouse cancer through a series of mice were mentioned. A brief description was given of the histopathology of cancer. As regards prophylaxis the speaker advocated the removal of all possible sources of irritation, and advised that the excessive use of meat and alcohol should be avoided, being possible causes. He reviewed the various treatments and "cures" from the early ages down to the present time, and in touching upon the surgical treatment referred to the paper by Sir Harold Stiles of Edinburgh, entitled "Dissemination of cancer of the breast and the necessity for treatment by extensive operation" (BRITISH MEDICAL JOURNAL, 1899, vol. i, p. 1452), in which he laid great stress upon the extensive lymphatic system of the breast and the necessity for the removal of all the tissues beneath the breast and in the axilla containing these lymphatics, pointing out that secondary operations were never so satisfactory as extensive primary operations.

Dr. Brierley then referred to the memorandum issued by the Ministry of Health, reported in our issue of May 24th (p. 924), in which are summarized deductions from the investigation of the records of upwards of 20,000 cases of cancer of the breast by Dr. Janet Lane-Claypon. In the light of present knowledge surgical operation offered the best chance of cure for cancer, but after his own experience with colloidal copper he was not prepared to admit that it was the "one chance" stated in the memorandum. He believed that many patients would have had a better chance of survival over the periods mentioned in the memorandum if a course of colloidal copper injections had been given after operative treatment. He reviewed the treatment by means of x rays and radium, and then returned to the treatment by colloidal copper and selenium, giving notes on cases treated by him.

Two cases of nodular growths in the breast with secondary glands in the axilla in which leave for operation had been refused were treated by him with intramuscular injections of colloidal copper; the growths and the glands disappeared after a course of injections extending a little over a year. Both patients were still alive and well, ten and seven years after the commencement of the treatment.

A patient with a large scirrhous carcinoma of the breast had her breast removed and the axilla cleared in November, 1916; the supraclavicular glands on the same side were found to be enlarged in February, 1918. Intramuscular injections of colloidal copper were given over a period of eight months; the glands disappeared, and the patient was still in good health.

In a patient, aged 62, with a history of haemorrhagic vaginal discharge over a period of two years, vaginal examination demonstrated the clinical signs of cancer of the cervix. Leave for operation was refused, but consent was given for intramuscular injections of colloidal copper; after seven injections the haemorrhage and discharge had ceased and the patient refused further injections. The cervix was then found to be healed and smooth. This patient died away from home nine months later from a "stroke," no return of the vaginal discharge having occurred.

A patient who had her breast removed and the axilla cleared out for medullary cancer in August, 1919, received a course of colloidal copper injections over a period of three months. She had had no recurrence and was quite well.

Another patient had the right breast removed and the axilla cleared for medullary cancer in February, 1920. As there was a small nodular lump in the left breast, with enlarged glands in the axilla, and the patient did not wish to have a second operation, a course of colloidal copper injections was given over a period of three months; the nodular lump and glands disappeared. In September, 1923, the patient returned on account of some enlarged glands in the right supraclavicular region; after a course of colloidal copper injections lasting four months the glands subsided. The patient was alive at the present time, was in excellent health, and no glands could be felt.

Two patients with advanced and inoperable carcinoma of the rectum had been treated by him; one improved and put on weight but died in twelve months, the other received no benefit.

A case of inoperable cancer of the rectum treated by colloidal copper and selenium had been reported by Mr. Lionel E. C. Norbury, F.R.C.S., in the *Proceedings of the Royal Society of Medicine*, June, 1923. After treatment for over two years no growth or ulceration could be detected, and the general health of the patient was excellent.

In conclusion Dr. Brierley urged the trial of colloidal copper after operations for cancer and in inoperable cases. He emphasized the importance of not being discouraged if there was no immediate improvement from the treatment, and of persevering with the injections until the patient was cured, or refused further treatment, or until the condition of the patient had become hopeless.

SURGERY OF THE BILIARY PASSAGES.

AT a meeting of the Medico-Chirurgical Society of Edinburgh on December 3rd, the President, Sir DAVID WALLACE, in the chair, Professor D. P. D. WILKIE read a paper entitled "Observations on the surgery of the biliary passages."

Professor Wilkie referred to the divergent opinions as to the place of surgery in the treatment of biliary disease, though the frequency of biliary infection and gall stones was generally admitted. Symptomatology and diagnosis were not discussed, with the exception of a reminder that flatulent dyspepsia in stout multiparous females very frequently indicated cholecystitis, and usually gall stones. Neglected biliary disease was a fruitful source of pronounced ill health, and at times led to death from pancreatitis and malignant disease. The chronic dyspeptic symptoms had a most deleterious effect on the health of the patient. Palliative treatment might obviate later surgical treatment. Professor Wilkie divided his cases into three groups: (1) Cases of biliary trouble demanding surgical treatment; (2) cases unsuitable for operation; (3) cases in which surgical treatment was debatable. In Group (1) he included all cases of acute obstructive cholecystitis in which there was an inflamed and distended gall bladder, cases of flatulent dyspepsia punctuated by occasional attacks of biliary colic and local tenderness, and cases of recurrent cholangitis with loss of weight, rigors, and intermittent jaundice. Group (2) included patients suffering from other organic diseases such as bronchitis, myocarditis, and malignant disease. Group (3) included the dyspeptic stout female with symptoms suggesting one aseptic cholesterin stone. Professor Wilkie favoured early operation, because many of these cases finally became worse and required an operation. The group included also vigorous patients with mild attacks of cholecystitis, and probably a primary tooth focus of infection, and, thirdly, the deeply jaundiced patient. He further classified his cases into five groups from the operative point of view. In the first group, cases urgently requiring operation, there were 8 males and 21 females, and the cholecystitis was almost always of the acute obstructive variety. In 13 cholecystectomy and in 16 cholecystostomy was performed; there was one death, a subacute pancreatitis being present. The tentative conclusion drawn from this small group was that cholecystectomy was the ideal treatment if the local and general condition was not adverse. In the second group, interval operations on the gall bladder, there were 27 males and 76 females. In 90 per cent. a history suggesting gall-bladder trouble was obtained of two to thirty years' duration. In all cases some degree of cholecystitis was present, and gall stones were found in 79 cases. Cholecystectomy was performed in 47 cases, and cholecystostomy in 56. The reasons for adopting one or other method were discussed, the functional capacity of the gall-bladder wall being the main deciding factor. In this series there were four deaths: in one case the general condition of the patient

was poor, in two general septicaemia was present, the gall-bladder infection being incidental, and in the fourth case there was marked cirrhosis of the liver. Professor Wilkie's general conclusions on this series were that cholecystectomy should be performed if the gall-bladder wall was grossly diseased, but if the wall was relatively healthy and all stones were removed recurrence was unlikely. In the third group, disease of the common bile duct, there were 5 males and 27 females. Many of the patients were in a very poor condition, and in 28 cases one or more stones were found—in most only one stone. The operation included free exposure of the common duct, puncture with the hypodermic needle, removal of calculi, and securing the patency of the duodenal opening. Some weakly patients were fed for a few days through a catheter passed into the duodenum through the duct. Four deaths occurred, one owing to haemorrhage from a large duodenal ulcer, another from acute pulmonary oedema, another from haemorrhage into the pancreas due to a wound in the duct, and the fourth after a large piece of gut had been removed because of tuberculous strictures. The lessons from this series were the value of free exposure in all biliary operations, aspiration of bile, and feeding by a duodenal tube. In the fourth group, malignant cases, there were 10 cases of carcinoma of the head of the pancreas, 2 cases of primary cancer of the common bile duct, and 6 of the gall bladder. Professor Wilkie was convinced that gall stones predisposed to carcinoma. In the 6 cases of gall-bladder carcinoma there were long-standing histories of biliary trouble, and gall stones were present. In the fifth group, cases with acute or subacute pancreatitis, most of the patients were over 60 years of age, showing the final phase of a chronic and neglected malady. All were operated on for urgent symptoms.

Professor Wilkie also discussed the question of operation in the presence of jaundice. In the whole series of 197 this symptom was present in 35 patients at the time of operation. The danger of liver inadequacy was combated by giving glucose before and after operation, but the tendency to haemorrhage in the malignant cases was a serious problem. The injection of 30 c.cm. of 30 per cent. sodium citrate was practised, and he had no hesitation in advising this line of treatment and continuing it after operation. The age factor in biliary surgery was touched upon, also the matter of associated lesions operated on—for example, diseased appendices. The following conclusions were drawn:

(1) Infection of the gall bladder and gall stones must be regarded seriously in view of the dangerous complications which might eventually supervene. (2) Operation in the early and uncomplicated stages was attended with little risk. (3) Cholecystectomy was the operation of choice when the gall bladder was seriously diseased. (4) Cholecystostomy was effective where the gall bladder had retained its elasticity, and was capable of further function. (5) Free exposure of the common duct should be secured in all cases. (6) Operation on deeply jaundiced patients with malignant disease was attended with considerable immediate risk. (7) Pre- and post-operative treatment to minimize haemorrhage and hepatic shock were essential for all deeply jaundiced patients. (8) Operation in the late stages, when acute or subacute pancreatitis had developed, was attended with grave risk, numerous complications, and considerable post-operative morbidity. (9) The time for surgery was before and not after complications had set in.

Immunity to the Pneumococcus.

Dr. STANLEY DAVIDSON referred to the fact that anti-pneumococcal serum was used so far back as 1881, but had little therapeutic effect till the work of the Rockefeller Institute in 1917 explained its failure and defined the different types of pneumococci by agglutination experiments. It was also found that potent protective serums could only be obtained from Type I pneumococcus. Reference was also made to the incidence of pneumococcal types in lobar pneumonia, and the reduction of mortality in lobar pneumonia at the Rockefeller Institute by using intravenous serum in large quantities. The advantages and disadvantages to the general practitioner of serum treatment were summarized, the latter being (1) cost of serum, (2) technical difficulties of administration, (3) production of serum sickness, (4) necessity of co-operation with a trained bacteriologist. The results of 44 cases of pneumococcal infection were described, and it was shown that Type I was the most prevalent organism, 17 empyema cases being all due to this type. Dr. Davidson then discussed the experimental side of the question. He used three kinds of vaccines to produce active immunization—namely, (1) the ordinary heat-killed saline emulsion, (2) the so-called detoxicated vaccine, and (3) defatted vaccine. In a paper read at the Annual Meeting of the British Medical Association in July, 1924 (reported in our issue of December 13th, p. 1103), the speaker had shown that detoxicated and defatted vaccines were not equivalent to the saline heat-killed vaccines in the production of antibody; in these experiments *B. suipestifer* had been used. The question of relationship between antibodies and immunity with reference to protection from a lethal dose was raised. With the exception of the antitoxins it had to be admitted that they were unable to state definitely the relationship of antibodies to immunity. The production of antibodies might, however, be regarded as an indication of the antigenic value of a serum. The real test of a vaccine was, therefore, the production of immunity to a lethal dose of the organism. Dr. Davidson then described a new series of experiments in which the pneumococcus was used. The three types of vaccine were again employed. Serums from rabbits injected with these vaccines were introduced into mice and varying strengths of vaccines employed. The results were shown by a full table of figures indicating the final conclusion. These results demonstrated that (1) the serum from animals injected with ordinary vaccines and the Rockefeller immune serum gave complete protection against 10,000 lethal doses of pneumococci; (2) serums from animals injected with detoxicated and defatted vaccines showed no protective properties, since normal rabbit's serum gave similar negative results; (3) in a protective experiment of this kind control animals should receive serum *plus* culture, since introducing foreign protein produced a temporary lowering of resistance. Further experiments to show the effect on rabbits treated with vaccines and then injected with live organisms demonstrated that the animals injected with the saline vaccine survived doses that killed the animals treated with defatted and detoxicated vaccines. The condition of the rabbits at the end of the immunization experiments differed greatly. Those injected with detoxicated vaccines were in good health seven days after the last dose; those treated with defatted antigens were in fair health, and hard lumps could be felt at the site of injection; those treated with ordinary vaccine had wasted to some extent; and those treated with a live culture were very ill indeed. Therefore the animals in relatively good health showed the least resistance, and those with toxic symptoms were proved by experiment to have a serum of high protective value. Finally, Dr. Davidson summed up by saying: "As judged by production of antibodies and protection to lethal doses of micro-organisms, detoxicated and defatted vaccines have no immunological value comparable to that of ordinary heat-killed bacterial vaccines."

STRUCTURE AND FUNCTION OF THE CORPUS LUTEUM.

A MEETING of the Section of Obstetrics of the Royal Academy of Medicine in Ireland was held on November 28th, the President, Dr. L. CASSIDY, in the chair.

Dr. BETHEL SOLOMONS read an abstract of a paper written by him and Professor Gatenby on the formation, structure, and physiology of the corpus luteum of man, the pig, and the duck-billed platypus. The theories relating to its formation were discussed, and it was stated that the investigations made indicated that the membrana granulosa layer was the responsible factor in formation. The authors had found that liquor folliculi, given by mouth to human patients, had no effect upon the haemorrhages of puberty, adult life, or the climacteric. On rats, however, it had a great effect; these experiments were similar to those of Allen and Doisy, but the rats were fed instead of being injected. Generally speaking, ovariotomized rats were affected sexually. Corpus luteum extract, given by the mouth, was found useful in the treatment of scanty and absent menstruation; it was valuable in the treatment of sterility, but of little service for menorrhagia and metrorrhagia. It was occasionally helpful in treating

dysmenorrhoea, but menopausal symptoms were seldom relieved; it was also successful in some cases of vomiting of pregnancy. When administered hypodermically it had cured some cases of severe vomiting and menstrual epilepsy. It was difficult to understand why corpus luteum administered by the mouth or hypodermically should cure amenorrhoea, considering its physiological action; this point required intensive investigation by the physiologist in combination with the gynaecologist. Theoretical explanations were that the drug stimulated the ovary to action, or that the corpus luteum after administration acted in the same manner as the true corpus luteum. It was difficult to understand why corpus luteum given throughout pregnancy should help to prevent the stillbirths which usually occurred in the last two months. Possibly it produced a healthy corpus luteum which supplied the hormone necessary to the child from the seventh month onwards.

Professor J. BRONTE GATENBY showed lantern slides illustrating the formation of the corpus luteum. The theca interna elements preserved their integrity until regression of the corpus luteum set in, so that the corpus luteum cells were really of single origin from the membrana granulosa. The corpus luteum of pregnancy was not always larger than that of menstruation, and the presence or absence of fatty substances constituted no sort of index as to the existence of pregnancy.

Professor H. PRINGLE did not agree that the luteal cells originated only from the granulosa cells. He believed that the granulosa and interstitial cells originated from the luteal cells. If they had two separate origins, two specific hormones would be expected. There were three separate hormones: (1) the hormone of the interstitial tissue; (2) the hormone of the Graafian follicle; and (3) the hormone of the corpus luteum, and this hormone seemed to antagonize the second hormone. The observations of Dr. Solomons and Professor Gatenby seemed to be incompatible with this hypothesis. One of the most interesting features of the effect of corpus luteum on ovulation was seen in cases where ovulation only followed coition. After sterile coiton in a rabbit the corpus luteum was almost indistinguishable from the corpus luteum following pregnancy, and the corpus luteum persisted nearly as long as if the corpus luteum ovum had been implanted. When the abdomen was opened and the surface of the ovary was follicized, a factor was introduced which might be in every way compatible with sterile coition. The whole question was still in a very unsatisfactory state, although Professor Gatenby had added enormously to their knowledge of the physiological changes which occurred in the corpus luteum.

Professor J. M. O'CONNOR had been very interested by the hormone therapy referred to that evening; some of the results given could not be ascribed to physiological effects. He had noted particularly the statement that there was no interstitial tissue present in the ovary, since he had previously been led to believe that interstitial tissue was the most important thing present in the ovary.

Dr. W. FEARON said that the bodies of the hormones were simple molecules, derived from well known amino-acids, which was why it was so important that these acids should be in the body to augment the internal secretion. For some internal secretions, such as insulin, no formula had yet been obtained.

FREQUENCY OF MICTURITION IN WOMEN.

AT a meeting of the London Association of the Medical Women's Federation held on December 9th, the President, Miss M. CHADBURN, in the chair, Miss E. C. LEWIS read a paper on frequency of micturition in women.

Miss Lewis approached the consideration of this symptom from the standpoint of its etiology and clinical characteristics, and discussed its differential diagnosis. The causes of this condition could be stated as: (1) disease of the bladder; (2) irritation of an otherwise healthy bladder; (3) incompatibility between the bladder and its contents; (4) a group of nervous diseases, organic and functional; (5) diseases of the kidneys and ureters. In the first group cystitis was extremely common in women, and might follow any change in the bladder which lowered its resistance. Prolonged congestion, retention of urine, traumatism, and changes in the bladder wall predisposed to cystitis; they might be masked by a secondary inflammation, but in every case of cystitis the original lesion should be looked for and treated. Frequency of micturition in cystitis was easily explicable, but it was less easy to account for it in other bladder lesions, such as an uninfected diverticulum. A simple papilloma did not cause frequency except when bleeding profusely, and then apparently because of sudden increase in the contents of the bladder, since blood was not irritating to the bladder. Miss Lewis had seen cases in which blood was coming down from one of the kidneys in considerable amount, but the bladder itself was normal and there was no frequency. Malignant growths, stones, or foreign bodies always tended to cause frequency. Irritation of the bladder, leading to frequency, might be caused by external pressure—for instance, by an enlarged uterus or an ovarian cyst. A uterus of normal size, if much anteflexed or lying horizontally across the pelvis, might impede the filling of the bladder and cause frequency. This was sometimes accompanied by pain relieved by micturition, unlike the pain associated with disease of the bladder. Urethral conditions, such as external prolapse of the urethral mucosa, which occurred typically at the extremes of life, might cause frequency: so also might a urethrocele, when the patient complained of repeated calls to empty the bladder, and a few drops of urine escaped when she coughed or made any sudden effort. Acute pelvic inflammations had probably an irritating effect on the bladder, while in cases of chronic cervicitis a trigonitis could generally be detected by cystoscopy. Irritation from within might be caused by change in the reaction of the urine, bacilluria, or an abnormal amount of phosphates or oxalates.

Relative inadequacy of the bladder to its contents might be due to the bladder being contracted owing to inflammation or to polyuria. Nervous diseases might cause motor symptoms of the bladder, hyperexcitability, or hyperaesthesia; frequency usually occurred in both cases. Hysterical and neurasthenic polyuria might also be met with. In the last group, frequency due to renal and ureteric conditions, inflammatory and several other lesions were included; the more common causes were, however, those of the previous groups. With regard to diagnosis, it was important to ascertain the number of times the patient passed water by day and by night, and whether the frequency was continuous or spasmodic. The quantity of urine passed each time indicated whether the bladder was inadequate or whether there was polyuria. Urgency with frequency was said to occur in some of the spinal cord lesions and incontinence in some of the urethral conditions. In cases of painless frequency, without other symptoms, some cause outside the bladder should be suspected. The routine clinical examination established the presence or absence of caruncle, prolapsed urethra, or urethrocele. Polyuria might indicate some surgical disease of the kidney, such as chronic relapsing pyelitis or pyelonephritis, or in young people early tuberculosis. Frequency accompanied by pain or by some abnormality of the urine nearly always indicated a lesion of the urinary tract, and in locating this the situation and character of the pain and its timing in relation to micturition were important.

Dr. IRENE YATES dealt with the clinical aspect of those diseases in which frequency was a symptom. The commoner of these were: (1) disorders of the nervous system; (2) inflammatory conditions of the urinary tract; (3) chronic interstitial nephritis; (4) diabetes mellitus. Those less commonly met with were diabetes insipidus and the so-called diabetes phosphaturia and oxaluria. Dr. Yates discussed frequency of micturition as a symptom of diabetes mellitus and of diabetes insipidus. In diabetes insipidus polyuria might be due to a tumour of the pituitary or to irritation of the gland from without, as in syphilitic meningitis. In other cases the polyuria seemed to depend on a polydipsia of nervous origin; here the volume of fluid excreted was not more than the intake, whereas in the pituitary cases it exceeded it.

Dr. C. PEAKE, the PRESIDENT, Mrs. R. GORDON HOLMES, Dr. L. M. JEFFRIES, Dr. M. A. BLAIR, Dr. M. DOBIE, Miss BANNERMAN, Dr. E. M. GUEST, Dr. M. BRADY, and Dr. JUSTINA WILSON also spoke.

Reviews.

AMERICA IN THE WAR.

Anthropology.

THE first part of the fifteenth volume of the history of *The Medical Department of the United States Army in the World War*[1] relates exclusively to army anthropology. A sidelight will be thrown on the character of its contents if it be mentioned that its index occupies about 60 pages and must supply at least 4,000 references, in addition to some 1,600 others in the table of contents. These calculations will suffice, perhaps, to suggest the tendency of mind which by a species of infection is liable to be created by even an incomplete study of the volume. It may be mentioned that besides letterpress it contains at least 400 elaborate statistical tables, plates, and graphs. It is, in short, by no means a book to recommend for perusal by way of whiling away an after-luncheon odd half-hour, but one which even a serious student may well find difficult to digest unless he takes off his coat for the task. Should he do so he will find himself rewarded by a good deal of information of an interesting and more or less directly useful kind.

On the whole, however, the volume will no doubt appeal chiefly to the professional anthropologist, who, if he lives on this side of the Atlantic, would probably shorten his study of it by refusing to take any notice of a good deal of the text and a great many of the tables. His action would be justified by the fact that the material thus rejected is of essential interest only to inhabitants of the United States, since it relates to the statistical distribution of the basic figures amongst its territorial components.

The volume is almost purely statistical, so, since statistics have been said to be capable of being made to prove anything, it is fair to point out that those responsible for the preparation of the volume do not appear to have directed the work with any preliminary prejudices. They have been content to get together as many data as they could, and then analyse and correlate them in a number of different ways. The primary object would seem to have been first to compare such coloured components of the population of the United States as came under observation with the components of European origin, and then to compare among themselves the eight European nationalities which chiefly contribute to the population as a whole.

One point of general interest that emerges is the immense fund of man strength that the United States possessed when it entered the war. Within about twelve months after that date there were registered as being between the ages of 18 and 45 over 23 million men, and of these nearly 11 million were of ideal military age—that is to say, between 21 and 30. There is no indication of how many of these men were ever medically examined for recruiting purposes, and there is initially a certain amount of obscurity in regard to the exact number of individuals from whom were derived the data handled in the volume. Comparison of the tables and the text leaves, however, no doubt that the number of individuals anthropometrically considered was 2 million; that 500,000 of these were also considered from an essentially medical point of view; and that, in addition, 100,000 individuals who may or may not have formed part of the stated 2 million were considered from the point of view of general anthropology.

The men forming this 2-million group were those first passed for service by recruiting boards, and the measurements derived from them were those ordinarily taken on such occasions—namely, stature, weight, and chest measurement. The half-million group was made up of individuals discharged on medical grounds when the 2 million men already in mobilization and training camps were again subjected to examination. The smallest group mentioned consisted of "veterans"—that is to say, it was made up of individuals who, whether they had been employed overseas or otherwise, had all served as soldiers for at least several months. Their measurements were taken at the time of their demobilization, under the supervision of expert anthropologists by men specially trained for the purpose.

The ostensible object of this examination was to secure data for the building of manikins for the use of army tailors of the future; but since it was undertaken at the request of the Medical Department, and carried out by it, the stated object was probably not the only one in view. The measurements taken were stature, span, sitting height, and height of the knee-joint, sternal notch, and pubis; the breadth of the shoulders and pelvis; the breadth, antero-posterior depth, and circumference of the chest; the distance from the second dorsal vertebra to the styloid process of the right ulnar; the circumference of the neck, of the waist, and of the thigh; of the leg just above the patella, at the level of the knee, just below the tuberosity of the tibia, and of the calf; and the inside length of the leg from the gluteal fold to the apex of the internal malleolus. Skin colour, hair colour, and eye colour were also recorded in numerous variations of each primary hue, as also the weight of the individual.

We quote this list of measurements almost in full by way of indicating the extent of the inquiry. The army anthropologist may possibly scoff at some of them as being solely of sartorial interest, but the value of the majority is fairly obvious. For instance, in grouping men for marching purposes, equality of leg length must certainly be of more importance than equality of total height, and men whose total height is low, but whose chest measurements and weight are relatively high, would carry packs much more easily than tall men of a light general build.

No head or foot measurements seem to have been taken, and this seems curious, both as regards the ostensible and the real object in view. The right fitting of helmets, caps, and foot-gear is certainly of military importance, and important also from the point of view of army outfitters.

In regard to the standard measurements, we note that the mean stature of the first million recruits, both white and coloured, was just under 5 ft. 7½ in., their mean undilated chest measurement just over 33 inches, and their mean weight just over 10 st. 1½ lb. Most of these men, of course, were quite young.

When classified according to the area of the United States from which they were drawn, or according to the races to which they were considered to belong, men from mountain areas were found habitually to "run tall," while racially the order and mean stature of the principal eight European nations were as follows: The Scottish (67.92 in.), the English (67.75 in.), the Germans (67.73 in.), the Irish (67.46 in.), the Poles (66.70 in.), the French (66.37 in.), the Hebrews (65.71 in.), and the Italians (65.03 in.). The assignment of an individual to a particular race was on conventional lines.

The same nations are seen to fall into a very different order when considered from the point of view of robustness, this being a correlation of several measurements. When divided into two main groups, Nordic and Mediterranean, the latter supplies better figures than the former, but the exact order of the nations individually in point of robustness is seen to be Poles, Italians, Germans, French, English, Scottish, Irish. In regard to differences between coloured and white races, the chief point seems to be that men of colour tend to be from the waist downwards longer and stronger than the whites, and from the waist upwards the reverse. This may be a surprise to those who, having lived in Africa, tend to believe that the strong point of a negro is the thickness of his head, and his weak point his shins.

The tables relating to correlations between medical defects and the standard measurements do not seem to justify any very positive conclusions, so we content ourselves by saying that they uphold, on the whole, the old belief that an individual who, for his race, is of average height, weight, and chest measurement, is likely to be better fitted for rough physical work, such as soldiering, than one who is either unusually short or unusually tall.

In regard to the general importance of anthropology from a military point of view, the authors of the report consider that the experience gained in raising an army show that if ever the task has to be undertaken again by the United

[1] *The Medical Department of the United States Army in the World War.* Vol. xv. Statistics. Part I, Army Anthropology. Prepared under the direction of Surgeon-General M. W. Ireland by C. B. Davenport, formerly Major, S.C., U.S.A., and A. G. Love, Major, M.C., U.S.A. Washington: Government Printing Offices. 1923. (Super roy. 8vo, pp. 635; 139 tables. 1.75 dollars.)

States there should at the outset be appointed among the officers of the Medical Department a broadly trained anthropologist for performance of the following duties:

1. Collaboration in drawing up schedules for the physical examination of recruits.
2. Consultation on the taking of the standard measurements and observations on recruits throughout the country, and especially at military camps and posts.
3. General supervision of the service of taking identification data.
4. Organization of the service of answering questions that may arise about the racial classification and racial differences of individuals.

In regard to the duty last named, it seems probable that the authors had in mind the fact that at one time it was intended to form units and aggregations of units on racial lines; in such case questions concerning ration allowance and many other points might clearly have arisen.

The analytical treatment of the basic data obtained is certainly remarkably complete and the volume as a whole a worthy companion of the first volume of the same history, to which attention was drawn some time ago.

BISMUTH IN SYPHILIS.

IT is three years since bismuth was introduced for the treatment of syphilis, and sufficient experience has now accumulated to justify the appearance of such a book as *Le Bismuth dans le Traitement de la Syphilis*,[2] by C. LEVADITI. It opens with an historical account of the discovery of bismuth as a remedy for syphilis, and with a summary of the properties of the metal, its toxicity, its absorption, and its elimination. Following this comes a chapter on experimental work on animals and then, the most important portion of the book, its use in clinical medicine. The author takes in turn the primary, secondary, and the tertiary stages of the disease, and finally deals with bismuth in neuro-syphilis and in the inherited disease, citing cases to illustrate his thesis and render the account as practical as possible. The influence of bismuth on the Wassermann reaction is then studied, and also its action on certain resistant forms of the disease in which mercury and arsenic have failed. The last chapter discusses the different methods of administering the drug, its dosage, and the different preparations.

Certainly the book has been written by a clinician who understands those points that are of importance to the practising doctor. The general conclusion is that bismuth acts curatively, not only in the laboratory with respect to the infected rabbit, but also in the infected human being.

PSYCHIATRY.

IN a volume entitled *The Borderland: Some of the Problems of Insanity*,[3] Dr. THEO. B. HYSLOP considers the difficult question of racial degeneracy. He takes a frankly pessimistic view of the general mental status of the community. He draws attention to the steady increase in the ratio of the certified insane to the population in England and Wales, and states that the American lunacy figures are even more startling than our own. He reminds us that statistics only refer to lunatics under official cognizance, and that they do not include those who as imbeciles are yet permitted to remain citizens, the thousands who are on the borderland between sanity and insanity, the weak-minded, the epileptic, the partially demented, the hysteric, the deluded, the morally insane, the drunkards, and the neurasthenics, who, having run their course all too soon, are incapacitated from taking part in, or adding to, the physical and mental welfare of the race. The author is of the opinion that if we were provided with statistics relating to those who by reason of mental infirmity are incapacitated from competition, or even aiding in their own survival, we should realize more completely the true state of affairs, and one and all would rise in revolt at the insidious onset of a national dementia which ere long it may be too late to combat or even ameliorate.

Dr. Hyslop has raised a question of paramount social importance, but we should be reluctant to accept unhesitatingly his views as to the mental decadence of the community; not because they are unpalatable, but because there are insufficient data on which to base an opinion as to whether the general tendency is towards deterioration, mental and physical, or the reverse. In an important paper[4] by Professor Kraepelin it is shown that the mental health of the community is determined by the simultaneous action of a great number of complicated, co-operating, interacting, and conflicting influences, and no one can say whither the resultant of the forces is tending. In order to determine whether the general tendency is towards decadence on the one hand, or progressive development of productive and resistive power on the other, psychiatric investigation on a large scale, as Kraepelin points out, is necessary. We need what he describes as a "mass psychiatry," having at its disposal statistics in their widest scope, to provide the foundations for a science of mental health—a preventive psychological medicine for combating all those mischiefs that we group under the head of mental degeneracy. Without such an inquiry we are scarcely in a position to admit or deny the accuracy of Dr. Hyslop's conclusions. Facts alone will enable us to estimate the extent of mental instability amongst the community, the degree to which it is increasing or diminishing, and the efficacy of our methods of dealing with it. Much more is needed than figures relating to the notified insane, but, as was pointed out in the Report of the Board of Control for 1923, the present increase of insane under care by no means necessarily connotes any increase in the incidence of insanity among the general population.

The book as a whole lacks continuity of theme and consists of isolated essays treating of various aspects of psychiatry. Some of the chapters deal with subjects of purely technical interest, and others are more popular in their appeal. The book contains a number of repetitions, and in one instance a long passage covering nearly two pages appears in different chapters. Dr. Hyslop has rendered a service to the community by bringing the problem of degeneracy into the foreground, but his treatment of the subject is too discursive to be really forceful and convincing.

NOTES ON BOOKS.

OPERATIONS upon the sympathetic ganglia and nerves are under trial in connexion with attempts to relieve angina pectoris, exophthalmic goitre, varieties of neuralgia and circulatory disturbances, chronic ulcerations, and the employment of regional anaesthesia. None of the foregoing proposals have become established procedures, but attempts require from the surgeon a preliminary knowledge of the anatomy and physiology of the vago-sympathetic ganglia, as well as of the results which have followed surgical undertakings. The recent book on the surgery of the vago-sympathetic,[5] by Professor BRÜNING and Dr. STAHL, supplies a very full account of this subject, together with excellent illustrations, including some coloured ones, a full table of contents, thirty-eight pages of bibliography, and a subject index. Under the several heads appended to the systematic description are abstracts of cases—both those under the authors, numbering sixty-six, and others referred to in the bibliography. The book forms a most thorough-going exposition of its subject.

The third International Conference on Leprosy was held at Strasbourg at the end of July, 1923, under the presidency of Professor Jeanselme of Paris, Sir Leonard Rogers being the honorary president. Delegates from all parts of the world assembled, including a representative of the Ministry of Health. A detailed report[6] of the conference has now been published; the lateness of its appearance is stated to be due to the unavoidable delays and difficulties in securing accurate translations of the papers which were read in other languages than French. The volume deals with leprosy under six

[2] *Le Bismuth dans le Traitement de la Syphilis.* By C. Levaditi. Paris: Masson et Cie. (Med. 8vo, pp. 316; 31 figures, 1 plate. Fr. 25.)
[3] *The Borderland: Some of the Problems of Insanity.* By Theo. B. Hyslop, M.D., F.R.S.E. London: Philip Allan and Co. 1924. (Roy. 8vo, pp. 310. 32s. 6d. net.)
[4] Ends and Means in Psychiatric Research. *Journal of Mental Science*, April, 1922.
[5] *Die Chirurgie des Vegetativen Nervensystems.* Von Dr. F. Brüning und Dr. O. Stahl. Berlin: Julius Springer. 1924. (Sup. roy. 8vo, pp. viii + 235; 72 figures. Gold marks 18; bound, gold marks 20.)
[6] *IIIe Conférence Internationale de la Lèpre.* Communications et Débats recueillis et colligés par le Dr. E. Marchoux. Paris: J. B. Baillière et Fils. 1924. (Imp. 8vo, pp. 528; 1 plate, 89 figures.)

headings—statistical, etiological, pathological, therapeutic, prophylactic, and legislative. It is well indexed, and many illustrations are included. Besides forming a record of an important congress it constitutes a useful reference book on leprosy, about which far more information is now available than was the case when the previous conference was held at Bergen in 1909.

The fact that a third edition of *Kystoskopischer Atlas*,[1] by Dr. WOSSIDLO, has appeared is a sufficient proof that the work has found favour with those interested in cystoscopy. The new edition differs very little from the old, and the author has avoided the temptation, to which all authors are exposed, of adding to the length of his work. The only addition of any note is the section on bilharzia of the bladder. To the coloured plates at the end of the book have been added pictures of syphilitic ulceration of the bladder and bilharzia.

[1] *Kystoskopischer Atlas.* Von Dr. med. E. Wossidlo. Third edition. Leipsig: Wilhelm Engelmann. 1924. (Imp. 8vo, pp. 111; 43 coloured plates, 53 figures.)

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE PRINCE OF WALES on December 16th presided over the distribution meeting of the King Edward's Hospital Fund for London, and read a letter from the King expressing satisfaction that the hospitals of London would have before long 2,000 more beds than before the war, and that the King's Fund was helping to provide another 300 beds, including 53 for accident cases.

Lord REVELSTOKE, honorary treasurer, reporting the amount received for general purposes, said that the only serious decrease was in the general fund legacies, which were always liable to fluctuation. On the other hand, anonymous donations of £7,000 and £5,000 had been received; a contribution of £15,000 had been made by the British Charities Association, while other subscriptions and donations had been well maintained. It was possible, therefore, to maintain the ordinary distribution at the figure authorized in 1923—namely, £235,000. It was essential, he thought, that the yearly distribution should correspond with the income. In accordance with the decision of the council last July that the proceeds of the legacies of the late Mr. and Mrs. Wells should be applied in aid of hospital extensions and improvements, the special distribution of £81,000 was available from this source. The Wells legacies were expected to amount to about £200,000, of which only £72,000 had yet been received. A considerable proportion of the £81,000 allocated at the meeting would not be actually payable for some time, in accordance with the conditions attached to the grants.

Sir WILLIAM COLLINS, in making the annual statement on behalf of the League of Mercy, said that by the end of the year the League would be able to hand over £14,500, bringing the total so far subscribed by it to the King's Fund to £368,034. The League of Mercy had benefited by the generosity of the British Charities Association, which had entrusted the League with the distribution of £5,000 to the extra-metropolitan hospitals. The League had been able to give the provincial hospitals £9,760, making a total to the extra-metropolitan hospitals of £64,769; the grand total for the last twenty-five years was thus £432,802.

Grants to Hospitals and Convalescent Homes.

Sir COOPER PERRY presented the report of the Distribution Committee. The amount of allocation amongst hospitals, including their recovery and convalescent branches, was £233,000, equalling that of last year. Besides co-operating in discussions and inquiries with regard to hospital accommodation, the King's Fund had taken practical steps towards the actual solution of the problem by helping the hospitals to carry out extensions that had been delayed by the war. It had also increased the proportion of the ordinary distribution allocated to grants in aid of capital expenditure. These grants this year amounted to £35,725, as compared with £30,100 in 1923, and £26,500 in 1922.

Major HAROLD WERNHER, honorary secretary, presented the schedule containing the list of awards to hospitals (including recovery and convalescent branches).

The larger sums awarded include:

£13,250 to the London Hospital, £11,500 to Guy's Hospital, £10,500 to St. Thomas's Hospital, £8,500 to University College Hospital, £8,300 to the Royal Northern Hospital, £8,000 to St. Bartholomew's Hospital, £7,500 to King's College Hospital, £7,000 to St. George's Hospital, £6,500 to the Metropolitan Hospital, £6,400 to the Middlesex Hospital, £6,100 to the Hospital for Sick Children, £6,000 to the Royal Free Hospital, £5,600 to the Miller General Hospital, £5,500 to St. Mary's Hospital, £5,000 to the West London Hospital, £4,600 to the Prince of Wales's General Hospital, £4,500 to the Queen's Hospital for Children, £4,450 to Queen Mary's Hospital for the East End, £4,000 to the National Hospital for the Paralysed and Epileptic, and £4,000 to Charing Cross Hospital.

Sir COOPER PERRY then presented the report of the Distribution Committee with reference to convalescent homes not attached to particular hospitals; this showed that £2,000 had been distributed during the year. Major-General Sir CECIL LOWTHER, honorary secretary, presented the schedule of awards. Sir COOPER PERRY then presented the report of the committee on the special distribution of the Wells legacies to date. The list of grants made or recommended amounted to £81,000, which would increase the number of beds available for patients by 301; of these beds 53 will be reserved for accident cases. Included in these grants were amounts of £25,000 to the Woolwich and District War Memorial Hospital, £16,000 to King's College Hospital, and £16,000 to the Miller General Hospital.

Improvement in Hospital Finance.

The PRINCE OF WALES called attention to the fact that the ordinary distribution this year of £235,000 had again been provided without drawing on reserves, and thanked the British Charities Association for its efforts in aid of the hospitals and for entrusting to the King's Fund the distribution of £15,000 for the London area. There were three points of importance in the Distribution Committee's report. The first was the enormous improvement in the ordinary finances of the hospitals of London. Taken altogether, and omitting the combined appeal and one exceptionally large legacy, the annual deficit had been reduced from £175,000 for the year 1922 to £20,000 for the year 1923. This seemed almost miraculous when compared with the annual deficit of nearly £400,000 four years ago. It indicated that the people of London were really attached to the voluntary hospitals, and were willing to make the necessary sacrifices to maintain them. It was to be hoped, therefore, that the deficits still remaining would soon be abolished. In the second place, the hospitals were being enlarged, and the King's Fund had been very active in this matter. The number of beds, 13,000 in 1922, would be increased to 14,000 when the schemes now in hand were completed. Further schemes were pending, and still others were only waiting for better times. The Distribution Committee had selected for help those hospital schemes which had just reached the stage at which special assistance would be most valuable. The third point was the provision of beds for accident cases; the report of the Ambulance Cases Disposal Committee of the King's Fund had been translated into action by both the London County Council Ambulance Service and the Distribution Committee of the Fund. Another forward movement by the King's Fund was the extension of the area of operations from a radius of nine miles round Charing Cross to a radius of eleven miles round St. Paul's Cathedral, bringing in more of the eastern districts and adding to the liabilities of the Fund. The Propaganda Subcommittee, under the chairmanship of Lord Burnham, had been very energetic, partly in connexion with direct propaganda for the hospitals and the King's Fund, and partly in regard to money-raising schemes including propaganda work. Arrangements were now being made for lectures in schools to spread among the young of all classes a knowledge of the work of the hospitals and the debt owed to them by the whole community. A panel of expert lecturers had been secured, and applications from schools were being received. Another subcommittee, with Sir Richard Gregory as chairman, had arranged a series of popular scientific lectures in various parts of London early next year.

Viscount CAVE, in moving a very cordial vote of thanks to the Prince of Wales for presiding, alluded to the keen personal interest he had taken in the Fund, and to the encouragement to be derived from his speeches. The motion was carried with acclamation.

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SATURDAY, DECEMBER 27TH, 1924.

LISTERISM AND WAR WOUNDS.

THE authoritative life of Lister by his nephew, Sir Rickman Godlee, appeared towards the end of 1917, and a detailed review was published in the issue of the BRITISH MEDICAL JOURNAL for December 1st of that year (p. 725). We then said that for the production of a successful biography two conditions were essential —a fit subject and a proper manner or style in the representation—and said that the volume fulfilled both conditions, observing: " that Lord Lister is one of the great figures in the history of the healing art there can be no question," and " that Sir Rickman Godlee has provided a memoir that will live as one of the great biographies every competent critic must cordially agree." A second edition was called for within a few months, and a third has now been published.[1] " For the most part," Sir Rickman Godlee says, " the book remains as it was first published. A little new material has been added, partly in the text, but chiefly in notes." He has, however, written a new chapter with the title " Postscript, 1924 "; it is founded upon information supplied to him by friends on the staffs of hospitals in England, Scotland, Ireland, Canada, America, and Switzerland; it will revive many memories, and will stimulate thought.

At the outbreak of the war of 1914-18 surgeons were, of course, far better equipped in knowledge and resources than in pre-antiseptic days. Yet early experiences with gunshot wounds were so disturbing that a feeling of dismay at their inability to check virulent infection swept over all. Cases superficially similar had been under care in civilian practice. Compound fractures were no new problem, and yet the military cases were doing so much worse than had been anticipated. What was the essential difference? Were our teachings fundamentally unsound? Had we forgotten lessons we thought we had learned? The obvious thing to do was to go back to Lister, to re-examine the writings of the Master, and particularly his early papers on compound fractures.

Few people had read, and fewer remembered from personal contact, the precise technique which Lister himself had advocated for these cases. The younger generations had been brought up on asepsis, had been educated in a milieu of high-pressure sterilizers, rubber gloves, masks, and dry wounds. Only the elders remembered, and only they employed the antiseptic lotion for the wound and the wet towel. When it came to antisepsis, it became necessary for the generation actually on the field of battle to work backwards from their bacteriological knowledge to where Lister had been in the sixties. They knew nothing, or next to nothing, of the rubbing of the wound with pure carbolic, of the pastes that Lister tried, of the various antiseptic solutions with which an attempt had been made to sterilize infected wounds. To add to their discomfiture, a most respected bacteriologist wrote most convincingly on the futility of antiseptics in general. What was the surgeon to believe? Some were for going back completely to the technique described in Lister's early papers—the use of pure carbolic, and so forth. This idea found favour with few; carbolic is no longer a favourite antiseptic. More were attracted by the salt treatment, which certainly appealed to the intelligence, even though the results were disappointing. New antiseptics were sought and discovered. Eusol came in and its powder, eupad, and then the Carrel-Dakin treatment. The latter would most certainly have made a strong appeal to Lister himself. In it is fulfilled one of the principles for the application of which he searched so long—the continuous renewal of an antiseptic solution which had no markedly deleterious effect on the tissues. And then came " bipp." In general utility the use of this paste far transcends Carrel-Dakin. In this preparation, devised by Mr. Rutherford Morison, we have an antiseptic paste such as Lister sought and would almost certainly have devised had he been in his heyday in these later troubled times. It is curious that Sir Rickman Godlee makes no mention of it in this book, though he pays a handsome tribute to the excision of wounds. Of the utility of excision there can be no question, and most who worked in France felt in the last months of the war that the wound problem, at long last, had been solved. Wound excision at the earliest possible moment, with primary, delayed primary, or secondary suture, as the nature of the wounds demanded; antiseptic treatment (Carrel-Dakin or bipp) for those already too heavily infected for excision to be the wise course: these were the principal methods finally adopted as routine. But it required fully three and a half years for their evolution, on an unprecedented mass of human material.

[1] *Lord Lister.* By Sir Rickman John Godlee, Bt., K.C.V.O., M.S., F.R.C.S. Third edition, revised. Oxford: The Clarendon Press. 1924. (Med. 8vo, pp. xvi + 685; illustrated. 21s. net.)

INSANITY IN NEW YORK STATE.

THE report of the State Hospital Commissioners of the State of New York for the year ending June 30th, 1923, is one of the legislative documents published by the State in 1924. The commissioners, three in number, hold much the same position as Commissioners of Lunacy hold in England. The State hospitals, to which the report refers, are the hospitals for the insane. Thirteen of them are classified as civil hospitals, two as hospitals for the criminal insane, and twenty-eight as licensed and seven as unlicensed institutions; all were visited during the year by the commissioners. The total number of patients under treatment in them was 49,663 in the civil hospitals, 1,698 in the hospitals for criminal insane, and 1,521 in the private institutions. The recovery rate among first admissions was 26.4 per cent., but only 3.7 per cent. of the total under treatment. The death rate among the latter was 79.7 per 1,000; the death rate among the senile, cerebral arterio-sclerosis, and general paralysis cases being as high as 338.6, 363.3, and 321.1 per 1,000 respectively. By far the greatest number of those under treatment were cases of dementia praecox (12,754 males and 13,730 females); the death rate was 33.7 per 1,000. The nearest approach to these numbers were 1,919 male and 3,769 female manic-depressive cases.

Alcoholic patients are classified in the report as those under treatment for the intemperate use of alcohol, and it is not clear if this means insanity due to alcohol, delirium tremens, or simply intemperance without definite morbid conditions, for the report notes that in a previous year the alcohol patients included moderate drinkers. Whatever is meant, the cases in the hospitals numbered 1,286 males and 501 females, with a death rate of 45.9 per 1,000. The only other cases in excess of these numbers were 2,342 of general

paralysis and 2,041 senile cases. Patients undergoing treatment for the use of drugs and other exogenous toxins were remarkably few—50 males and 38 females, with 6 deaths. We naturally look to a report of this kind to disclose facts bearing on the effects of the American prohibition legislation, which came into force in January, 1920. With the exception of the year 1910, when moderate drinkers were included in the total of 2,172 first admissions for intemperate use of alcohol, the admissions year by year during 1911, 1912, 1913, 1914, and 1915 were respectively 1,384, 1,370, 1,421, 1,285, and 1,164. There was then a drop to 907 in 1916, but a big rise to 1,452 in 1917. There was a decline to 1,104 in 1918, and the figures in the five subsequent years were 965, 803, 822, 879, and 886. The percentage of admissions for intemperate use of alcohol amongst total admissions was 20.9 for males and 4.0 for females in the year 1923. This percentage among males has steadily declined since 1911, but showed no marked decline among females until 1914, when it dropped from 11.1 to 8.8. During the three years 1921, 1922, and 1923, however, there has been a tendency to increase—from 18.9 to 20.9 in males, and 3.7 in 1920 to 4.0 in 1923 in females.

Some interesting facts are also disclosed concerning the admission rate for all classes of insane persons in relation to population and to racial origin. In 1903 it was 886 per million of population; the lowest rate on record was 677 in 1902 and the highest 944 in 1917. The statistics, however, do not give evidence of progressive increase or decrease in admissions to the State hospitals, although the number of criminal insane admitted in 1923 was higher than in any previous year since 1909, with the exception of the years 1913 and 1914. The statistics of race and nativity are interesting, but require fuller explanation than is given in the report before any conclusions can be drawn from them. As regards nativity, 55.2 per cent. of the 6,900 first admissions in 1923 were born of parents natives of the United States, and 44.5 per cent. of foreign-born parents. Only 18 admissions were of unknown origin. By far the largest number of "foreign-born" were of Irish or Italian parentage—namely, 513, or 16.7 per cent., Irish, and 467, or 15.2 per cent., Italian. No other nationality, except German with 11.9 per cent. and Russian with 11.2 per cent., reached a percentage of double figures. The English "foreign-born" percentage was 4.5 and the Scottish 1.6. The marked difference in these figures may no doubt be due to a preponderance of Irish and Italian "foreign-borns" in the State of New York, but unfortunately the report throws no light on this. When the first admissions are classified according to racial origin, as distinct from "foreign-born" nationality, the predominance amongst the insane of cases of Irish origin is still more marked, but this again may be due to an Irish predominance in the population. The percentages among the 6,900 first admissions in 1923 were 17.0 of Irish origin, 11.4 German, 10.8 Hebrew, 8.0 Italian, 5.8 Slavonic, 4.6 African, and 4.4 English; 25.7 per cent. were of mixed race and 3.5 per cent. of unascertained race.

Besides these and other statistical analyses of the cases under treatment and first admissions, the report contains an account of the scientific work of the State Psychiatric Institute, but most of it has already been published in psychiatric and other journals. The chief scientific investigation recorded in 1923 was the relation of focal infections to the functional psychoses. The investigation had been going on for the previous three years, and has now been concluded. The results showed that focal infection, whether from the teeth, stomach, intestine, or elsewhere, could not be considered a specific factor in these psychoses. Another investigation in 1923 was into the effect of *Bacillus acidophilus* therapy in chronic constipation and diarrhoea. It was prompted by a desire to find some method of dealing with intestinal stasis and possible toxaemias by other than radical surgical methods. In the course of this investigation the view that the presence of indican in the urine is of clinical significance was disproved, as indican was often excreted with no accompanying constipation, and no evidence of its presence was found in the urine of two patients who had had no normal defaecation for four months. There are other interesting notes in the section of the report dealing with the work of the Psychiatric Institute, especially with regard to the absence of abnormality in the brains of patients dying from dementia praecox and the pathological changes found in the brains of epileptics.

Overcrowding is stated to have been worse in 1923 than it had ever been in the history of these institutions. Attempts are being made in several directions to remedy this. The State Legislature passed a bill during the year for the issue of bonds to the amount of 50 million dollars in order to replace the old, worn out, and inflammable State hospital buildings. The need of this was brought forcibly to notice by a disastrous fire, in February, 1923, in the Manhattan Hospital for the Insane, a hospital of 4,665 beds, when twenty-two patients and three of the staff perished. Another measure for reducing the number of patients was the appointment of a medical examiner to investigate and remove aliens who may have been admitted from other States or countries. But the chief measure was the discharge of patients to their homes, where they were kept under medical supervision, or their transport from the overcrowded metropolitan hospitals to hospitals up country. In connexion with the treatment and supervision of patients on parole in their own homes, forty-three out-patient clinics for mental diseases have been established in large centres of population. They are regarded as an important measure also for decreasing the incidence of mental diseases. Persons with premonitions of mental disturbance are taken in hand in them by medical experts, and also receive assistance from social workers, of whom there are twenty-eight attached to the hospital staffs. Effective work has in this way been carried out in preventing mental breakdown and promoting mental health.

CHLORINE TREATMENT OF CERTAIN INFECTIONS.

THE use of chlorine in certain infectious diseases, such as influenza and tuberculosis, is no new suggestion; conflicting reports as to its value in the latter disease were obtained from British tuberculosis specialists before the war. On June 2nd, 1923 (p. 958), we reported experiments that had been made in the University of Arkansas, which were stated to support the conclusion that the daily breathing of air containing small amounts of chlorine acted as a preventive of influenza. More recently Lieut.-Colonel E. B. Vedder and Captain H. P. Sawyer, of the Medical Corps of the United States Army, investigated the value of chlorine, and came to the conclusion[1] that inhalations of chlorine of a concentration of 0.015 mg. per litre had a definitely curative value in common colds, influenza, whooping-cough, and other respiratory diseases in which the infecting organisms

[1] *Journ. Amer. Med. Assoc.*, March 8th, 1924, p. 764.

were situated on the surface of the respiratory mucous membrane. They added that the apparatus for this treatment could be employed in general practice. This report excited considerable interest, and individual practitioners in America, as well as hospitals and health departments, began to test the treatment on a large scale. Two clinics were established in New York City, and a report of their results was published in the health bulletin of the City of New York. An article in the *Journal of the American Medical Association* of December 6th, 1924 (p. 1851), contains the information that only 6.5 per cent. of 506 patients with various respiratory diseases reported themselves as cured, as compared with 71.4 per cent. of 931 patients stated in the original paper by Vedder and Sawyer to have been cured. Of the patients treated in the New York clinics improvement was reported in 53 per cent., but it is remarked that no great importance can be attached to this, since patients with minor respiratory infections tend to improve naturally to some extent. It is stated that in acute cases the claims made for chlorine treatment cannot be sustained. In whooping-cough 18 cases with 12 controls were studied; the chlorine method of treatment was not found to present any appreciable advantages, and no benefit was reported in asthma and hay fever; in fact, three patients with asthma became decidedly worse while under treatment. The conclusion is reached that, though the work of the original investigators appears to have been conducted in a most careful and scientific manner, the original claims in favour of this treatment have not been substantiated. Numerous investigations are being made elsewhere in America, the results of which must be awaited before a final decision can be reached; at present, however, chlorine inhalation treatment cannot apparently be recommended in respiratory diseases.

MINERALIZED METHYLATED SPIRIT.

SINCE May 1st, 1924, mineralized or denatured methylated spirit (spiritus methylatus) has consisted of a mixture of spirit 90 per cent., wood naphtha 9.5 per cent., crude pyridine 0.5 per cent., mineral naphtha 0.375 per cent., and a small proportion of colouring matter (methyl-violet). This is the only methylated spirit allowed to be sold by retailers. Pyridine as a denaturant was introduced by the Board of Customs and Excise in accordance with a promise made by the Government to make such changes in the composition of methylated spirit as would render it quite undrinkable without destroying its usefulness. It soon became apparent, however, that the new methylated spirit was, by reason of its pyridine, a skin irritant. The pyridine renders the spirit not merely nauseous and poisonous, but unsuitable for use as a lotion to harden the skin and prevent bedsores; it is also incompatible with picric acid. The matter was raised in the Annual Representative Meeting of the British Medical Association at Bradford last July, and a resolution was adopted asking the Council "to consider the alteration in the composition of methylated spirit by the addition of pyridine, which renders the spirit unfit for use as an external application to the skin and unpleasant to burn on account of the disagreeable odour produced, and to take such steps as are possible to get the use of pyridine discontinued if the spirit is supplied to the order of a medical practitioner." In accordance with this resolution (as mentioned in the SUPPLEMENT of November 8th) the Board of Customs and Excise was urged to take immediate steps to meet the situation. The department replied that it was hoping to arrive at a solution of the difficulty in a short time, but in the meanwhile applications from hospitals and bona-fide nursing homes for permission to receive industrial methylated spirit—a mixture of 95 volumes of strong spirit with 5 volumes of wood naphtha—would be considered, provided the spirit was used strictly for medical and surgical purposes and not for burning. This, of course, touches only one side of the matter, and complaints from medical practitioners continue to reach the head office of the Association. Communications have been received also from the Pharmaceutical Society indicating the concern felt by pharmacists at the harmful effects of the compulsory addition of pyridine to methylated spirit. The Board of Customs and Excise has informed the Medical Secretary within the last few days that it is proposing to issue regulations dealing with this question, and will give the Association an opportunity of seeing the regulations before they are issued.

THE SUDHOFF CELEBRATION.

DR. KARL SUDHOFF, the medical historian, was born on November 26th, 1853. Imbued with admiration for his services, Dr. Charles Singer and Dr. Henry E. Sigerist of Zürich have shown that medicine has no geographical limitations or share in national enmities by celebrating his seventieth birthday in a collection of eighteen *Essays on the History of Medicine*,[1] written in their own languages by nineteen contributors from six countries—England, America, Germany, Austria, Italy, and Switzerland. The editors have in no way spared themselves; for Dr. Charles Singer contributes two articles—one "The origin of the medical school of Salerno, the first European university; an attempted reconstruction," in collaboration with his wife, and a second with Dr. E. C. Streeter of Harvard on "Fifteenth century miniatures of extramural dissection." Dr. Sigerist writes on the birth of Western medicine in the section devoted to the Renaissance, and is responsible for the bibliography of Professor Sudhoff's writings, which occupies twenty-seven pages and numbers more than 680 items. The volume is dedicated to Professor Sudhoff in a short and graceful letter such as Sir Clifford Allbutt writes with a charm all his own. The frontispiece is a half-length photograph of Professor Sudhoff, and the articles are arranged under the five headings of antiquity, the Middle Ages, the Renaissance, modern times, and general subjects. The first and the longest article, occupying more than a sixth of the volume, is on prehistoric attempts to avoid and abolish epidemic diseases, and is followed by Dr. Lynn Thorndike of Cleveland, Ohio, on "Disputed dates, civilization and climate, and traces of magic in the scientific treatises ascribed to Theophrastus." The section devoted to the Middle Ages contains Dr. E. O. von Lippmann's essay on the history of alchemy, Dr. and Mrs. Singer's account of Salerno, and Dr. E. T. Withington's translation of Roger Bacon's *De Erroribus Medicorum*. Among the articles dealing with the Renaissance times there is a well illustrated account of "The 'Epitome' of Vesalius on Vellum in the British Museum" by Mr. W. G. Spencer. A specially interesting article is that by Dr. Fielding H. Garrison on "The newer epidemiology." Altogether the editors must be heartily congratulated on the success of this volume.

CONTROL OF VENEREAL DISEASE.

AT an Abolitionist Congress in Graz, Austria, in September, Dr. W. F. Velthuyzen, chief medical officer of health for Amsterdam, read a thoughtful paper entitled "Can venereal diseases be dealt with in the same way as other infections?" The paper has been translated for publication in *The Shield*, the official organ of the

[1] *Essays on the History of Medicine.* Presented to Karl Sudhoff on the Occasion of his Seventieth Birthday, November 26th, 1923. Edited by Charles Singer and Henry E. Sigerist. London: Oxford University Press; Zürich: Seldwyla. 1924. (Roy. 8vo, pp. vii + 418; 36 illustrations. £2 2s. net.)

Association for Moral and Social Hygiene in this country. As the question of compulsory notification of these diseases is attracting increasing attention, and was recently debated at a conference at the Wembley Exhibition, the views of the health officer of the largest city in Holland are worth indicating. He says that the reporting of cases by doctors in attendance has a double object: (*a*) "to keep the authorities informed of the amount of disease in the community and to enable them to judge of the success of the measures taken against it"; and (*b*) "to enable them to take whatever action seems useful in regard to infected individuals." As regards (*a*) he is of opinion that statistics obtained by compulsory notification are no more reliable than those from hospitals and polyclinics, and from information supplied by physicians willing to co-operate. He declares that in Denmark compulsory notification of syphilis provides information which is considered so unreliable that alongside this legal system another system has been established, based on the voluntary co-operation of the medical profession. All this, however, relates to compulsory notification by numbers, not by names, and he considers this quite useless. Concerning notification by name, he takes the well known ground that it is a violation of professional secrecy, that absence of secrecy "would bring mischiefs which no possible advantages could compensate," and that many sufferers under risk of exposure would prefer to do without treatment. Notification limited to persons who, after consulting a doctor, fail to carry out his treatment or leave it off too soon, is next considered by Dr. Velthuyzen. He sets forth what he regards as the argument of those who support this limited notification, including rigorous hospital isolation of cases not able to be dealt with suitably otherwise owing to social factors, and the isolation of infected prostitutes. Even here, however, Dr. Velthuyzen has certain objections into which want of space forbids our following him. The next question discussed is the medical examination of suspected persons, just as school children or teachers suspected of harbouring the diphtheria bacillus are examined. But here also Dr. Velthuyzen is in opposition, and he summarizes his own experience thus: "At Amsterdam, thanks to the devotion of doctors, nurses, and the social worker attached to the polyclinic, we have obtained this remarkable result, that 95 per cent. of the syphilitic men and 85 per cent. of the women have remained continuously under treatment at the clinic and polyclinic during the two years that this system of collaboration has been established. These figures are certainly not surpassed by these obtained in countries where compulsory treatment is in force."

SEWAGE TREATMENT IN THE UNITED STATES.

About the middle of the last century it was considered that broad irrigation was almost the last word in the treatment of the sewage of large communities. Large sewage farms were constructed, and the sanitary authorities of the day had visions of large profits accruing from them, with a welcome reduction in the local rates. Very soon these broad acres became waterlogged, and a double system of sewers was advocated, the aphorism, "the rain to the river, the sewage to the soil," slipping glibly from the tongue of the sanitary engineer. The local authorities were soon disillusioned, and the sewage farm was found to be a very costly enterprise. It was displaced by a variety of methods of treatment, each having for its object the clarification of the sewage and the production of an effluent sufficiently pure to be discharged into a watercourse. This appears to have been the stage at which the scientific treatment of sewage was entered upon in the United States of America, and a valuable report has recently been issued by the United States Public Health Service on fifteen representative sewage treatment plants in that country. Twelve of these plants are modifications of what are known as septic tanks, and three are the more modern method of activated sludge treatment. The report is by three officers of the Public Health Service—Mr. H. H. Wagenhals, associate sanitary engineer, Mr. E. J. Theriault, assistant chemist, and Mr. H. B. Hommon, sanitary engineer. The engineers first spent about four days in inspecting and estimating the efficiency and economy of each plant, and obtaining information concerning the population served, etc. The chemist devoted about sixteen days to laboratory studies on the spot, a large number of samples being taken and a series of about twelve analyses made; importance is attached to the fact that the same methods of analysis were adopted at all the plants. A most valuable feature of the report is the detailed account given of the sampling methods used as well as of the analytical processes adopted. The authors of the report do not appear to have considered themselves called upon to offer any very definite opinion on the efficiency or otherwise of any of the plants investigated, but the reader will have no difficulty in forming his own judgement from the elaborate tables of the analytical results obtained. The only exception to the non-committal attitude mentioned is the guarded statement that the activated sludge process is the most recent promising development in the treatment of sewage; a very informing description is given of three such installations, each of which is yielding satisfactory results. The value of this report as a contribution to the subject to which it relates can hardly be overestimated, for the investigations which it records have been carried out on such comprehensive lines that the fallacies inherent in the investigations of observers acting independently of one another have been reduced to a minimum.

The New South Wales Government has recently voted a sum of £2,500 a year towards the staffing and equipment of the department of obstetrics in the University of Sydney. This department has hitherto been under a lecturer and three clinical tutors, but the University Senate has now established a professorship of obstetrics to which a salary of £1,100 a year is attached, and applications for the chair are being invited in this country and in Australia. Further particulars may be obtained from the Agent-General for New South Wales, Australia House, Strand, London, who, on behalf of the University, will receive applications until Saturday, January 24th, 1925. It is understood that, as is usual in the case of all professorships of the University of Sydney, the Senate will have the assistance of a committee of advice sitting in this country.

The announcement we were able to make last week that the Earl of Balfour, K.G., O.M., F.R.S., has accepted the position of Chairman of the Medical Research Council will have been received with great satisfaction by the medical profession. Lord Balfour is not only a man of the highest distinction in public life, but also one who has attained eminence in the department of science, to which he has given special attention. The Council had its origin in the Research Committee set up under the Insurance Act of 1911, which provided that Parliament should vote one penny in respect of each insured person, and that the whole or part of this sum should be applied for purposes of research. The first chairman of the Medical Research Committee was Lord Moulton of Bank, who held the office from 1914 to 1916; he was succeeded by Viscount Astor, who, again, was succeeded by Viscount Goschen. In 1920 the Committee became the Medical Research Council, directly

responsible to the Privy Council. Lord Goschen was succeeded last March by the Right Hon. Edward Wood, who retired on his appointment to be Minister of Agriculture in the present Government. It is to the vacancy thus created that Lord Balfour has been appointed.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons stands adjourned till February 10th. The legislation which it carried or advanced before adjourning for Christmas did not include any bills on medical or health subjects.

The Schick Test.—Answering Mr. Broad (Lab., Edmonton), on December 19th, Mr. Neville Chamberlain, Minister of Health, said he was aware that in the town of Dallas, Texas, in the year 1919, 10 children were killed and over 60 others injured by toxin-antitoxin, administered in connexion with the Schick test for diphtheria; and that in Vienna recently several infants died after an injection of toxin-antitoxin. In each instance the deaths were due to unskilled technique or unstandardized material. The necessity of great care had been emphasized in the report of the chief medical officer, Ministry of Health, for 1923. Mr. Broad urged the Minister to withdraw the memorandum (68/Med.) issued by the Ministry in 1922, but Mr. Chamberlain saw no necessity to do so. The memorandum was not confined, as Mr. Broad suggested, to children in Poor Law institutions, but had general reference to residential schools and institutions.

Puerperal Mortality.—On December 17th, Sir Kingsley Wood, replying to Dr. Fremantle, said that in 1923 deaths of women classed to pregnancy and child-bearing numbered 2,892, being 3.81 per 1,000 births; the average annual ratio from 1891 to 1895 was 5.49 per 1,000 births; after correction the comparable ratio for 1923 was 3.6, a decrease of 34 per cent., compared with a decline of 45 per cent. in the death rate of females between 15 and 45 years from all causes. A circular on maternal mortality had been issued by the Ministry of Health on June 30th, and local authorities were urged to take action with a view to reducing the risk involved in childbirth. The Minister proposed to await the results of this circular before considering further action.

In reply to other questions Sir Kingsley Wood said that eight local authorities had received powers to supervise all maternity homes in their areas. The Minister of Health hoped to introduce legislation on this subject.

Rain-bearing Winds and Early Phthisis.—Dr. D. Shiels (Lab., Edinburgh East), during the debate on the Address, referred, in a maiden speech, to the controversy about the prevalence of tuberculosis in districts exposed to the rain-bearing winds, and after praising the system of building houses with hollow outer walls, concurred in the declaration previously made by Dr. Fremantle, that tuberculosis could be stamped out in a generation.

Notes in Brief.

The Minister of Health is advised that further knowledge is required before any definite opinion could be expressed on the alleged discovery of the causal organism of scarlet fever, of the consequent test of susceptibility to the disease, and of the specific character of the toxin and antitoxin. These matters were under investigation by the medical staff of the Ministry.

No promise can be given of the introduction of a Smoke Abatement Bill before 1926.

The regulations to be issued for carrying out the principal recommendations of the committee on the use of preservatives in food will not, according to present plans, make it an offence to use arsenic in the preparation of cocoa, nor soapstone in baking powder.

The average age of death of Sheffield grinders varied between 45.9 in 1918 and 52.9 in 1920. The total deaths between 1914 and 1923 were 1,136, of which 524 were due to pulmonary tuberculosis, silicosis, or other fibroid disease.

Since January, 1924, eighteen deputy commissioners of medical services under the Ministry of Pensions have been notified that their whole-time employment will not be continued after April 30th, 1925. Fifteen of them served in the forces during the war.

No proposal for the abolition of the Ministry of Pensions is under the consideration of the Prime Minister.

The Minister for War, Sir L. Worthington-Evans, informed Dr. Fremantle, on December 16th, that only five candidates were accepted for the Royal Army Medical Corps in the July examination. He was personally endeavouring to remedy the present most unsatisfactory position with regard to the filling of commissions in the R.A.M.C.

The Minister of Health is considering the steps necessary to give effect to the principal recommendations of the Departmental Committee which recently reported on the adulteration of food and the selling of impure food. The Minister proposes to regulate in particular the use of dyes in food, and to do this chiefly by regulations, a bill not being thought necessary. Some time must pass before the regulations can be issued.

Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, stated on December 17th that the Minister of Health did not propose to consider further extensions of the village settlements for tuberculous persons and their families until more experience was available on this particular method.

ADDISON'S ANAEMIA.

THE ROBERT CAMPBELL MEMORIAL ORATION.

THE Robert Campbell Memorial Oration was delivered in the Medical Institute, Belfast, on November 20th, by Dr. THOMAS HOUSTON, O.B.E., director of the clinical laboratories of the Royal Victoria Hospital. Dr. Houston prefaced his oration with an appreciative reference to the personal characteristics of Robert Campbell and to his work as a leader among the group of surgeons who revolutionized surgery in the Belfast School.

Taking as the theme of his oration that remarkable form of anaemia which was first described by Addison in 1855, Dr. Houston gave cogent reasons for a general adoption of the more appropriate name of Addison's anaemia for the disease in place of the term "pernicious anaemia," which is more commonly employed and which was introduced by Biermer in 1872. Although the Americans claimed that Walter Channing, in 1842, was the first to describe the disease, in connexion with pathological conditions of the uterus and the puerperal state, there could be no doubt that no impartial critic, on comparing Addison's original description with those of Biermer and Channing, would hesitate for a moment in giving the honour to the English physician, whose account of the disease would pass down to all future students of medicine as a masterpiece of clinical description.

Etiological Factors.

The first landmark in the study of the disease was undoubtedly Addison's clinical description, and now, after the lapse of seventy years, every word of that masterpiece of clinical observation still held good. In considering the etiology of the disease, Addison laid stress on what he termed its idiopathic, or, as we should express it, cryptogenic, character, using that term "to distinguish the disease from cases in which there existed more or less evidence of some of the usual causes or concomitants of the anaemic state." The term was, in the main, still applicable at the present day. Although most writers admitted that a certain number of cases were met with as the result of such conditions as severe and prolonged haemorrhage, pregnancy, internal parasites, and cancer, Dr. Houston expressed the opinion that such cases became fewer as methods of clinical examination became more exact. There were, however, he admitted, two exceptions to this general tendency. In a number of cases of infection with the *Bothriocephalus latus* a severe anaemia might develop, having all the characteristics of Addison's anaemia, and in certain cases of cancer with secondary deposits in the bone marrow, a similar blood picture had been observed, a case of this kind having been recorded by Dr. Houston himself in the BRITISH MEDICAL JOURNAL of November 14th, 1903. Besides these two conditions, the recognition of which constituted an advance on Addison's original conception, the influence of heredity as an important factor in the etiology of the disease had recently received considerable attention. A number of cases had come under Dr. Houston's notice in which the element of heredity was unmistakably present. In 1902 he had under examination a female patient exhibiting the characteristic symptoms; a few years later he examined the blood of her sister and brother; all three patients died from anaemia. In a second case the patient's sister showed the characteristic blood changes, and there was a history of her father and uncle having died with the same disease. In a third case the patient's father, brother, and uncle died from the disease. It had recently been suggested by Hurst that the hereditary factor in such cases was dependent on achlorhydria, a condition which Hurst regarded as being constantly present, as always preceding the anaemia, and as being in most cases congenital. With the exception of one doubtful case, all Dr. Houston's observations tended to confirm Hurst's contention. Another feature which could now be added towards the completion of Addison's picture was the relapsing character of the anaemia—a feature which, in Dr. Houston's opinion, was so marked that it could not fail to impress the clinical observer. In one case under Dr. Houston's care the patient, who was comatose from the anaemia, had had two previous

attacks, with an interval of five years between each. She recovered from the third attack and remained well for five years, when she died in the fourth relapse. This patient, therefore, lived for fifteen years after the first attack, and she stated that during the remissions she was perfectly well and able to attend to her household duties without fatigue. Other analogous cases were cited by Dr. Houston as having come under his notice, in which patients suffering from grave conditions, such as coma and cardiac failure, recovered and became to all appearance perfectly well, dying, perhaps many years later, from a recurrence or series of recurrences of the disease. A point of considerable interest in connexion with some of these cases was referred to by Dr. Houston as of prognostic significance—namely, the occurrence of oedema. His conclusions, arrived at from a series of observations, were that a gain of weight in a case of Addison's anaemia, under treatment and showing no improvement in the haemoglobin, was to be regarded as an unfavourable sign, indicating dilution of the blood and consequent escape of serum into the tissues. On the other hand, the symptom might mark a critical phase in the disease, and indicate the first step towards concentration of the blood. Immediately after this sudden increase in oedema either a marked improvement was to be expected or a fatal issue.

Another modern observation of importance was that of the frequent occurrence of glossitis. William Hunter, who drew attention to the point, had shown that the disease was generally accompanied with glossitis at one period or another of its course, and had indicated his opinion of its importance by suggesting the term "glossitic anaemia" for the disease. He believed that it was perhaps the most characteristic and constant of its symptoms. In Dr. Houston's experience the majority of cases exhibited the symptom at some period in the course of the disease, and in some cases irritability of the tongue was constantly present. He had, however, seen a number of otherwise typical cases in which it had never occurred. With regard to other symptoms, those originating in the gastro-intestinal tract, such as vomiting, diarrhoea, and abdominal pain, were generally very prominent, and the fact that they were of common occurrence had strengthened the belief that the disease was due to an intestinal toxaemia. Byrom Bramwell had suggested, on this account, that the disease might appropriately be termed "gastro-intestinal-hepatic anaemia." The nervous symptoms associated with Addison's anaemia were of particular interest, but although the connexion between the disease and combined sclerosis had been much discussed, no real solution of the problem of their relationship had been reached. It was claimed that all cases of true combined sclerosis had a total absence of free hydrochloric acid in the stomach; and the disease could exist for years without any anaemia, but as a rule an anaemia of the Addisonian type developed at some stage of its course. A remarkable point in this connexion was that the paresis might become worse as the anaemia improved, and both the anaemia and the nervous symptoms were liable to remissions which appeared to be entirely independent of each other.

The Blood Changes.

If Addison's description marked the starting-point in the history of the disease, the second important chapter was undoubtedly the study of the concomitant blood changes, which received its impulse in the work of Ehrlich. Ehrlich regarded the essential lesion of Addison's anaemia to be a megaloblastic degeneration of the bone marrow, due to some unknown toxin which tended to promote the embryonic type of blood formation. One of the most striking features of the disease was the marked anisocytosis which is usually present, but this, as Dr. Houston pointed out, was by no means characteristic; if, however, it were accompanied by a high colour index or an increased amount of haemoglobin per red cell, the condition was almost diagnostic of the disease. It might be stated definitely that an increase of haemoglobin per red cell was characteristic of the disease. Ehrlich regarded the presence of megaloblasts as being practically pathognomonic, but this view had been called in question, since the presence of these cells had been demonstrated in other forms of anaemia, particularly those occurring in cases suffering from repeated small haemorrhages. Piney has recently endeavoured to revive Ehrlich's theory, but as Dr. Houston pointed out, a difficulty arises in coming to a decision on the question owing to the frequent impossibility of deciding whether a given cell should be classified as a macro-normoblast or as a true megaloblast. It could, however, be stated that the presence of one or two typical megaloblasts often turned the balance of opinion in favour of Addison's anaemia. The changes in the number and proportions of the leucocytes had not, in Dr. Houston's opinion, received the attention they deserved. There was nearly always marked leucopenia, proportional in a rough way to the anaemia. When a patient improved it was the rule to find that the leucocytes increased in number, and when the polymorphonuclears were greatly diminished the patient was usually in a grave condition. It was quite usual in severe cases to find the total leucocyte count 1,000 per c.mm. or under. Examination of the blood serum had given important results. Van den Bergh's test for bilirubin in the serum always gave an increased positive indirect result in Addison's anaemia, but not in cancerous and other forms of secondary anaemia. This was, in Dr. Houston's opinion, a very definite proof that haemolysis was a constant feature of the disease. Clarke and Evans had shown that the serum in Addison's anaemia had a decreased protective power against haemolysis by saponin. They found that this decreased protective power was more pronounced in Addison's anaemia than in any other condition investigated; and that it varied much during the course of the disease, but was an important factor in determining the rate of blood destruction. These results have been confirmed by Dr. Houston in severe types of the disease, but little diminution of the protective power was found to occur in milder cases.

Pathogenesis.

The third chapter in the study of Addison's anaemia concerned the origin, nature, and pathogenesis of the disease. This chapter might be said to have been opened by Hunter. He came to the conclusion that Addison's anaemia was a specific, haemolytic disease, that the main seat of the haemolysis was in the portal circulation, and that the haemolysis was probably due to a poison generated in the alimentary canal. As evidence of the occurrence of haemolysis and as supporting the theory, Dr. Houston enumerated the following: (1) The severe and rapid anaemia without external loss of blood, (2) its occurrence in association with an apparently increased activity of the bone marrow, (3) and with an increased excretion of urobilin, (4) and an increased bilirubin content of the blood, (5) a marked deposit of haemosiderin in certain organs, (6) an increased phagocytosis of red cells, and (7) the fact that a blood transfusion did not always raise, but might even be followed by a fall in, the blood count. The evidence was, on the whole, convincing, but did not, in Dr. Houston's opinion, amount to absolute certainty.

With regard to the second point in Hunter's theory—namely, that the haemolysis took place in the portal circulation, probably by a toxin absorbed from the alimentary tract—the argument for the first conclusion was the enormous amount and peculiar distribution of the haemosiderin deposits found in the liver. But it had been shown by McMaster, Rous, Peyton, and Larimore that repeated introductions of small quantities of haemoglobin into the general circulation led to an identical siderosis. The foundation of Hunter's doctrine was, therefore, somewhat insecure. In Dr. Houston's opinion, although there were other reasons for the belief in a toxin originating in the alimentary tract, the only good argument that they possessed of the alimentary origin of the supposed toxin was the similarity of the symptom-complex occurring in *Bothriocephalus* anaemia.

Recently Hurst had advocated the theory that achlorhydria was the essential etiological factor in the disease, but it could not be said that the theory rested on anything approaching experimental proof. On the other hand, Louisa Ashby had come to the conclusion, on experimental grounds, that there was little evidence of the presence of any toxin circulating in the blood in pernicious anaemia. Her results seemed to show that the blood destruction which took

place in this disease was due to a speeding-up of the natural methods of blood destruction in the body, rather than to any toxin. Another theory of the pathogenesis of Addison's anaemia which was of great interest was that of Dr. Hastings Gilford. He had suggested that the disease was no more than a premature senescence of the blood-forming organs. One of the main objections urged against the theory was that Addison's anaemia was rare in old age. Dr. Houston, in agreement with Dr. Gilford, regarded this as probably incorrect; he had seen a considerable number of cases of typical Addison's anaemia in old people, and he believed that many would be found if they were systematically looked for.

Treatment.

Dr. Houston concluded his oration with a brief reference to treatment. He considered that arsenic should be tried first, commencing with small doses and not increasing them to any extent, except in cases that did not respond. Arsenic might also be given intravenously, as novarsenobenzol (N.A.B.), or hypodermically as sodium cacodylate, but the agent should not be pressed, and if a prolonged trial proved ineffective the administration of the drug should be discontinued. Hydrochloric acid in large doses should always be tried; it sometimes had a good effect on the indigestion, and might determine a remission of the disease. If these measures failed to produce improvement, blood transfusion would often be found to be of extreme value, in some cases producing a definite remission at once. In the case of repeated transfusions it was important that the donor's blood should be carefully tested against that of the recipient; it was insufficient merely to type the blood. In the event of inability to find a suitable vein, extensive cutting operations should be avoided, and intramuscular or subcutaneous injections resorted to, Dr. Houston having found that these methods gave exceedingly good results. On general principles it was desirable to remove all septic foci, although Dr. Houston had observed little effect on the course of the anaemia in many cases, contrasting in this respect very markedly with cases of secondary anaemia. Finally, with regard to splenectomy, he had had no experience, but from a study of the literature he concluded that it was to be recommended in certain selected cases.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

(*Continued from page 1122.*)

LUNACY ADMINISTRATION UNDER THE POOR LAW.

At the resumed sitting of the Royal Commission on Lunacy and Mental Disorder on December 16th and 17th evidence was given on behalf of the Association of Poor Law Unions by the Rev. P. S. G. Propert, president of that body, Mr. R. A. Leach, vice-president, Mr. J. H. Ford, clerk to the guardians, Leeds, and Mr. J. W. Flint, chairman of the Sheffield guardians.

Mr. PROPERT stated that his experience as a guardian for thirty years showed that on the whole the lunacy laws in their relation to the Poor Law had worked smoothly and satisfactorily. He had been impressed by the absence of serious complaints.

The Chairman, Mr. H. P. MACMILLAN, said that the Commission had been struck by the extent to which Poor Law administration had been brought into lunacy administration. Many felt that this was rather an unfortunate association. By utilization of the Poor Law machinery a person who became mentally sick and was received into a Poor Law institution became for the time being a pauper, whereas this did not happen if a person had some other complaint and went into a general hospital.

Mr. PROPERT said that the Poor Law hospitals were becoming very popular. The Poor Law stigma was passing away. He agreed that it was desirable to assimilate the treatment of mental illness as much as possible to the treatment of other forms of illness, and in his own union (Fulham), by means of separate observation wards, which were really small hospitals, the Poor Law atmosphere had disappeared in this connexion, although, of course, the administration was still Poor Law. Treatment without certification would be a great advantage. Whatever arrangements were arrived at with regard to certificates preceding detention, they should be the same for the rate-aided as for the private patient. As to whether two certificates were necessary, a good deal depended upon the qualifications of the doctor who gave the first certificate.

Mr. LEACH urged the desirability that the number of persons dealt with under the Lunacy Acts when the proceedings taken proved abortive for one reason or another should be recorded in the reports of the Board of Control. He urged also that an alleged lunatic should have all the protection accorded under Section 13 of the Act. While there might not be such a high standard of medical skill for mental cases available in Poor Law institutions, the standard of nursing was as high as that in mental hospitals, or possibly higher.

Much of the remainder of the evidence of these witnesses was devoted to technical matters of Poor Law administration.

Licensed Houses.

The next witness was Dr. F. H. EDWARDS, medical superintendent, Camberwell House, who gave the Commission a history and description of the licensed house. He said that institutions of this kind came into legal existence in 1774, when they were spoken of as private asylums. The Act of 1774 laid it down that houses that were to receive the insane must be licensed by law, and that people must not be received except under medical certificate. Previous to 1811, however, no certificates were required in the case of pauper patients, who were received and detained in licensed houses without any formality whatever, and the only protection they got was due to the fear on the part of those detaining them that action might subsequently be taken for illegal detention.

The Chairman pointed out that both the number of licensed houses and the number of patients under treatment in them had progressively diminished. Dr. Edwards said that there was a clear reason for that. The function of the licensed house formerly was largely that of receiving pauper patients under contract. During recent years, however, many large boroughs had provided themselves with mental hospitals, so that the licensed house in this respect had become less necessary.

Figures were put in showing that in 1847 there were 141 licensed houses, with 6,629 inmates, of whom 3,996 were paupers; in 1914 there were only 68 licensed houses, with 3,493 inmates, of whom 638 were paupers; in 1923 there were 56 licensed houses, with 2,686 inmates, none of whom were paupers. The witness said that the reduction in number of licensed houses meant more particularly the elimination of the very small houses. The largest licensed house in the kingdom was one for 672 patients, and some of the small ones had as few as four. The need for the licensed house still remained, and indeed the number of these places was not sufficient, or, rather, they were not distributed so as to cover the needs of the country properly. There did undoubtedly exist in a large section of the population a demand for the treatment of the insane in other than a public institution. Every country in Europe and America had its licensed houses under some name or other. Another cause which had contributed to their decline in number was that many of them were started by medical men particularly interested in the care and treatment of the insane, and on their death the licensed house, which was their private property, fell to their heirs, who perhaps had not the same interest, and so the house as an institution tended to disappear. The licensed house was carried on, not for charity, but for gain. But it met the needs of a section of the community who did not want any charitable aid, and at the same time did not want to place themselves or their relatives in a public institution. He explained that the licensed house fell into two categories—namely, metropolitan licensed houses, licensed by the Commissioners of the Board of Control, and provincial licensed houses, licensed by the local justices. He proceeded to describe the safeguards of the patient in the licensed house. To suppose illegal detention would be to connote a conspiracy between the doctors, the magistrates, and the visiting Commissioners. His own licensed house was visited eight times a year by the Commissioners.

Sir CECIL CHUBB, LL.B., gave evidence as the proprietor of the Old Manor House, Salisbury, the largest and one of the oldest licensed houses in the country. The house comprised nineteen separate houses, which rendered classification very effective. The patients at present in residence numbered 501. The medical staff consisted of the superintendent and four officers. Patients were given every possible opportunity of speaking to the visiting authority; in fact, on the occasion of their last visit the Commissioners interviewed ten or twelve patients privately. He considered that the power of granting leave of absence was a useful provision at the stage of convalescence. On the question of policy as between private and pauper patients, he thought the rate-aided patient should also have the advantage of two certificates.

The Chairman said that the Commission had been impressed by the divergent methods by which persons reached institutions for the insane. A possible course to recommend might be the institution of a single medical certificate in all cases, with the reservation that where any doubt was entertained by the single doctor or by the judicial authority, either one or the other should be entitled to call for a second or any number of opinions. This, of course, had the drawback that the decision as to the supporting evidence would in many cases be left to the discretion of the single doctor.

Sir Cecil Chubb said that the present preliminaries to a patient's reception had occasionally resulted in persons being brought to the institution who should not be there. His doctor had refused to receive such cases. There might have been a mistake in diagnosis, such as the confusion of delirium tremens with insanity. He thought there should be a provisional order of short duration, say of three days, which could be extended. The existing code adequately safeguarded the patient in the matter of discharge. The total percentage of recoveries at the Old Manor House as compared with direct admissions in 1923 was 31.64. The average rate of discharge from 1914 to 1923 had been 37 per cent. He added that since the Harnett case there had been many more applications for admission as voluntary boarders, owing to the refusal of doctors to certify. Only the other morning a doctor had told him that he would not certify a case for £20,000!

Dr. FRANK FAWSSETT, medical visitor to licensed houses for East Sussex, described the procedure at his visitations, which took place

four times a year. Special attention was paid to recent admissions, and every opportunity was given to patients for private interviews. The witness stated, further, that the patients were encouraged to say anything which was on their minds, and were given to understand that the visitors represented a means of communication with the outside world.

Sir JAMES BARR of Liverpool also gave evidence as a medical visitor, an office which he had held for forty years. In his view the provisions of the Act were efficacious as a safeguard against the undue detention of patients. Complaints were more frequent and emphatic from undoubted cases of insanity than from cases on the way to recovery. He agreed that there might occasionally be differing opinions as to when a recovering patient could be discharged. In the institution he visited there were only about six voluntary boarders, but he thought that this class should be encouraged, because, if people were to understand that the benefits of an institution could be obtained without certification, cases would be received at an earlier and more curable stage. He did not see any special advantage in two medical certificates in all cases.

In reply to Sir Humphry Rolleston, who asked whether the witness had any suggestion to offer with regard to the protection given to medical men certifying, Sir James Barr said that he would like to have the legal protection increased, although he had no specific recommendations as to how this should be done. At present medical men felt so strongly on this matter that, unless a man or woman was palpably and dangerously insane, they could not be got to certify, because they feared that they might be liable at any time to have to withstand an action at law. On another question, he would prefer the mechanism for dealing with incipient cases to be attached to a mental hospital, rather than to a general hospital; the former would be more specialized, and the general atmosphere and surroundings would be quieter and more congenial to the patient.

The Commission adjourned until January 13th, 1925.

England and Wales.

UNIVERSITY OF LEEDS CELEBRATION WEEK.

THE celebration week in connexion with the jubilee of the Yorkshire College of Science and the coming of age of the University of Leeds opened on December 15th with a ceremonial gathering at the University in the morning, over which the Duke of Devonshire, Chancellor of the University, presided. Addresses were given by the Vice-Chancellor, Dr. J. B. Baillie, and Sir Dugald Clerk, who was on the staff at the opening of the Yorkshire College fifty years ago. Sir Berkeley Moynihan, professor of surgery in the University, speaking at a reception at the medical school in the evening, gave a brilliant account of the history of medicine in Leeds from William Hey, one of the founders of the Leeds General Infirmary, in 1767, to the present day. At a dinner held in the Town Hall, in the evening, the Earl of Balfour, Chancellor of the University of Cambridge, proposing the toast of "The University of Leeds," described the ideals of the modern university. He was convinced that of all the instruments now in existence for the material advancement of mankind, science, with its many applications, was incomparably the greatest. The teaching of science, however, was not the whole nor perhaps the vital function of a modern university. Specialization was necessary, but it must be accompanied by a wide and generous general culture, acquired not only in lecture theatres, but also in the social centres of university life. A reception of delegates from universities and learned societies was held on December 16th, when honorary degrees were presented to Lord Balfour; Mr. E. G. Arnold, Pro-Chancellor of Leeds University; Sir Berkeley Moynihan; Sir Michael Sadler, formerly Vice-Chancellor of Leeds University, and now Master of University College, Oxford; Professor J. B. Cohen; Dr. J. E. Eddison, formerly professor of medicine in Leeds University; and others. In the evening two portraits of Sir Michael Sadler were presented to him. Mr. Arnold, who presented the portrait, which is to be hung in the University, said that a memorial of the great work performed by Sir Michael during his vice-chancellorship from 1911 to 1923 had been organized, and as a result this portrait would be placed in the great hall; a replica had been painted for Sir Michael himself, and a fund of over £600 had been provided for the relief and help of necessitous students. Sir Berkeley Moynihan, speaking on behalf of the medical department, said that their tribute to Sir Michael Sadler might well be, "That he has enriched greatly the traditions which, planted nearly a century ago in the soil of our school of medicine, have taken deep root in the loyal service of our whole University, and in the days to come will probably flourish, a great heritage to all our people." On December 17th Professor Kendall gave an address at a conversazione held at the University on the contributions of Leeds University to scientific knowledge. The Lord Mayor and the City Council paid an official visit to the University on December 18th, and a comic opera, written by Professor Garstang, was performed in the evening. Representatives of county and county borough councils paid an official visit on December 19th, and in the evening a dinner was held by the Old Students' Association. On December 20th the various departments of the University were thrown open to the public for inspection.

SHEFFIELD ANNUAL MEDICAL DINNER.

The annual Sheffield medical dinner was held on December 11th, under the joint auspices of the Sheffield Division of the British Medical Association, the Medical Faculty of the University, the Sheffield Medico-Chirurgical Society, and the Local Medical and Panel Committees. Mr. Garrick Wilson, chairman of the Sheffield Division, was in the chair, and Dr. H. B. Brackenbury, the Chairman of the Representative Body of the British Medical Association, was the guest of honour. Professor A. J. Hall proposed the toast of "The Corporation and City of Sheffield," and the Lord Mayor replied. The Master Cutler, proposing the toast of "The medical profession," said that the city ought to be very proud of its doctors, since among the seventeen largest towns in this country only four had a lower death rate than Sheffield. Dr. Brackenbury, replying to this toast, drew attention to the relations of medicine to industry, which year by year were becoming more clearly important. He referred to the schemes for industrial welfare, which depended so largely upon medical co-operation, to the subjects of industrial disease and hygiene, and to the recent psychological inquiries, which were of such value in promoting the efficiency of the workers. The development of the whole personality to its highest capacity was the aim of the medical profession, which tended the mind as well as the body. The health of the community was, however, the responsibility, not of the medical profession, but of the community itself, the individuals of which had in their own hands the ruling of their own health. The real function of the medical profession was to teach, to advise, and to help.

PROFESSOR KENWOOD'S VALEDICTORY.

About sixty of his former students gathered at dinner on December 19th to bid farewell to Professor H. R. Kenwood, C.M.G., who is resigning the Chair of Hygiene and Public Health in the University of London. Major-General Sir Wilfred Beveridge presided, and spoke of the esteem which Professor Kenwood had enjoyed during his thirty-five years in a teaching capacity at University College. He had proved to be not only a brilliant instructor and an acute observer, but also a real friend to those who studied under him, and his interest in his pupils did not cease after they had passed from his tuition. He had achieved fame, not only in the laboratory and lecture theatre, but in the field of administration, and for his invaluable services in military hygiene during the war he was mentioned in dispatches. Dr. Louis Parkes, as an old collaborator with Professor Kenwood, joined in the tribute. It was in 1887 that he himself went to University College to assist Professor Corfield, and two years later Henry Kenwood came as one of the students. The speaker was attracted at once by his evident ability and not less by his very engaging manners, which remained one of his characteristics to this day. Kenwood soon found a place on the teaching staff, and both as assistant and as professor he had proved himself a national asset. He had been the means of instructing in Public Health 1,200 men who had taken the diploma and were now scattered over the United Kingdom, the Dominions, India, and foreign countries. He had given them a good foundation of knowledge in all the various problems connected with this large and ever-enlarging subject, and now, when medical officers who had taken the D.P.H. in London met one another abroad, the fact that they had studied under this human and accessible teacher furnished an immediate bond of fellowship. Professor

Kenwood expressed his thanks for the overwhelming kindness shown him. He had always felt that at University College the teaching was the great end to be pursued; research was dependent upon teaching, for there could be no good research without good teaching. The record of research at University College was one of which no one need be ashamed, and quite early in his professorship methods of research were adopted which had proved of considerable value in public health work. At the same time, a great deal of research had the result of locking a man up in his preoccupations and causing him to neglect his teaching. Research was far more absorbing than lecturing, and it was really a self-sacrificing individual with a keen sense of duty who concentrated on the teaching side in a university chair. University College during the last twenty years had been the largest training centre for students for the D.P.H. in Great Britain. There had been times when students had to be turned away owing to lack of accommodation. He had been singularly fortunate alike in the readiness of his pupils to learn and the loyalty of his teaching colleagues. He deplored that on the chemical side the provision at University College was not what it should be, but here again it was an object lesson of what good work could be done in poor circumstances. He added that University College had decided to give him an emeritus professorship, and that the department would remain in the very capable hands of Dr. Delafield, the present lecturer, who had been associated with him for the last five years. Dr. Delafield would keep the flag flying until the time came for the department to close down, for it was extremely probable that, when the London School of Hygiene opened, the post-graduate teaching at University College would cease, and the London School would become the one centre for public health teaching in the metropolis. During the evening Professor Kenwood was presented with a silver rose bowl, and Mrs. Kenwood with a boudoir clock.

Blackburn and District Medical Society.

The annual dinner of the Blackburn and District Medical Society was held on December 11th. The President, Dr. J. E. Bowes, responding to the toast of his health, referred to the great desire in the medical profession to-day to take advantage of every possible means to eradicate and prevent disease. Already typhoid fever had been nearly banished, and good progress had been made in other directions. There was still much to do in the work of abolishing tuberculosis, and this ideal would come nearer of realization when local authorities used all the powers they possessed. He remarked that the regional incidence of pneumonia was very striking; the number of deaths from it in the north-western division of England was five times that of the southern counties, and twice that of London. Active research work with regard to cancer was in progress, and he believed that there would have to be an alteration of dietary in the direction of simplification. The amount spent so far upon the investigation of cancer in this country was not more than £200,000, though £8,000,000 was spent on the construction of one battleship. In conclusion Dr. Bowes appealed for support for the Royal Medical Benevolent Fund. The Mayor of Blackburn, responding to the toast of "The town and trade of Blackburn," said there was no section of the community who more fully exhibited the true civic spirit than medical practitioners. He referred to the fine work of the Royal Infirmary and the great benefits that Blackburn people had derived from it.

Bristol Medical School.

At the annual dinner of past and present students of the Bristol Medical School, Mr. W. Ernest Miles, F.R.C.S., was the guest of the evening, and proposed the toast of "The Medical School." He paid tribute to the past distinguished teachers in both surgery and medicine, recalling the names of Professors Greig Smith and James Swayne and Dr. Michell Clarke. He alluded to the great traditions of which the school was justly proud, and added that with its present distinguished teachers the school could look forward with every confidence to continued progress in the future. Surgeon Commander Blatchford and Mr. J. J. Hughes responded to the toast. Musical items were supplied by the jazz band of the Faculty of Medicine, and the guests were subsequently entertained at the University by the wives of the staff of the Faculty of Medicine.

Scotland.

Edinburgh Medical Graduation and Reception.

At a graduation ceremony held in the M'Ewan Hall of the University of Edinburgh on December 19th, ninety-one graduands received the degrees of M.B., Ch.B. The Edinburgh and Leith Division of the British Medical Association, according to the custom which has prevailed for some years, held a reception for those about to qualify in the hall of the University Union on Tuesday, December 16th. About sixty of the graduands accepted the invitation, and were received by some sixty members of the Association and their wives. The entertainment provided consisted in part of addresses varied by musical items. After tea the Women Students' Orchestra, under the direction of Miss McKay, rendered several pieces, Mr. Bryan Williams contributed several pianoforte solos, and Dr. Allison sang. Dr. Keppie Paterson, Chairman of the Edinburgh and Leith Division, who presided and received the guests, introduced Mr. Alexander Miles, F.R.C.S., senior surgeon to the Royal Infirmary, and stated that this was probably the last occasion on which Mr. Miles would address them as a teacher, because he was retiring from the service of the Infirmary early next year. Mr. Miles delivered an address, tinged with a happy humour, upon the privileges and responsibilities of medical practice. He said that his hearers' approaching graduation was similar to a wedding, but a wedding from which there was no divorce, because once a graduate always a graduate. A medical diploma differed from diplomas in other faculties, because it not only conferred an academic distinction, but it carried with it the immediate privilege of earning a livelihood. He urged upon them specially the desirability of taking up some hobby distinct from their professional work, which would be a relaxation from their labours and would enable these to be carried out with greater zest during working hours. The chairman, in thanking Mr. Miles, took the opportunity to urge upon his hearers the advantages to be derived from solidarity of the medical profession, which could be largely gained by joining the British Medical Association, which included about 70 per cent. of the practitioners in Great Britain. He also urged upon them the desirability of keeping themselves in touch with periodical medical literature as well as with the results of research; this could be obtained nowhere better than in the British Medical Journal. He also referred to the desirability of every practitioner being a member of some medical defence association for his individual security. Mr. McCracken, one of the graduands, proposed a hearty vote of thanks to the chairman and to the Association for the welcome to the ranks of the profession which had been extended to the graduands.

Edinburgh Royal Infirmary Radiology Department.

Reference was made in our issues of August 23rd and December 6th to the forthcoming radiological department of the Edinburgh Royal Infirmary. The plans for this were passed at the Edinburgh Dean of Guild Court last week, and the department is expected to be the largest and most completely equipped in this country. It is hoped that it will be in working order by October, 1925, and that it will meet the requirements of the Infirmary for many years to come. The building is expected to cost £40,000, while the electrical and other equipment will necessitate a further expenditure of £12,000. The building will be situated to the north of the east clinical theatre and immediately to the east of the long corridor connecting the surgical and medical houses, and will have two floors, with a large basement in which the heavier pieces of generating apparatus will be housed. The ground floor will be arranged for radiography, with a large radiographic room for photographing bones and joints; a screening room specially designed for following up opaque meals through the stomach

and intestines; another screening room for heart and lung cases; developing rooms and rooms for superficial *x*-ray treatment and for deep therapy. The deep-therapy room will be used chiefly in the treatment of cancer, and it is intended that the apparatus to be installed for this purpose shall have great power and work at a voltage of 250,000. On the ground floor there will be a demonstration room for students, capable of seating 100, and a smaller room, capable of holding 20 to 30 students, also a laboratory for research work, administrative rooms, and waiting and dressing rooms. On the upper floor there will be rooms for massage, remedial exercises, and treatment by electrical applications, radium, and artificial sunlight, as well as photographic and developing rooms. A very complete system of artificial ventilation by mechanical suction will be installed, and the building will be heated by steam.

LEITH WAR MEMORIAL HOSPITAL WING.

The managers of Leith Hospital were entertained by the president of the board, Mr. John A. Lindsay, to luncheon on December 11th. The chairman, replying to the toast of the hospital, intimated that the £54,000 which had been subscribed for the addition of a children's wing to the hospital as a war memorial for Leith had been increased by interest to the sum of £63,000. For further alterations on the present building a sum of £5,000 would be required, and of this £2,000 had been already promised. The Principal of the University, who was one of the guests, in commenting upon these gifts, said that the fact that hospitals were able to carry on their work on a purely voluntary basis was a tribute to the practical Christianity of the people, and was an example of what might be called the best kind of socialism.

APPEAL FOR GLASGOW SICK CHILDREN'S HOSPITAL.

The directors of the Royal Hospital for Sick Children in Glasgow have issued an appeal, signed by the Duchess of York, Princess Louise, and other patronesses and patrons, for support, with a view to additions and extensions of the hospital. The sum required is £75,000, and in an appeal for this sum the directors set forth the reasons for which they find it necessary to proceed with additions which will complete the original plan, and also with various extensions which are urgently required for the efficient carrying on of the work of the hospital. It is pointed out that the whole sum is not required immediately, and that subscribers may make payments of contributions by instalments.

Correspondence.

THE NURSING DIFFICULTY IN THE SMALLER HOSPITALS.

SIR,—I wish to call attention to a serious difficulty which will shortly have to be faced if the smaller hospitals are not to be deprived of competent nurses. The regulations of the General Nursing Council which came into force last July, admirable as no doubt they are for raising the standard, and in consequence the value, of the future nurse, are having certain serious repercussions which have not perhaps yet been fully realized.

By practically confining the training of registrable nurses, even in the earlier stages, to the larger hospitals the Council has dealt a blow at the smaller hospitals which must make the satisfactory nursing of them almost impossible. No woman who intends to make the profession of nursing the serious work of her life (and no others are likely to make satisfactory nurses) is likely to begin her training at one of the smaller hospitals. From the point of view of qualifying for the *Nursing Register* time spent in this way would simply be time wasted. The consequence will be that the matrons of these smaller hospitals will find it impossible to obtain the right stamp of probationer, and the nursing of patients in other than the larger hospitals will become increasingly unsatisfactory. This is a most unfortunate effect, especially as it is in such hospitals, in most of which there is no resident house-surgeon, that the help of skilled and reliable nurses is most needed.

But there are other unfortunate consequences. The demand for well trained nurses is increasing, and it will be quite impossible for the larger hospitals alone to meet this demand, especially with the longer and more strenuous course of training now enforced. Many of the most satisfactory nurses now employed throughout the country have been trained, and well trained, at these smaller hospitals, and from now onward that large source of supply will cease. Indeed, these hospitals, so far from supplying trained nurses, will in the future have to draw upon the larger hospitals if they are to carry on at all, and thus still further deplete the supply of trained nurses, which is already inadequate. Surely some way can be found by which the opportunities for training of nurses afforded by the smaller hospitals can be utilized and not wasted.

If the General Nursing Council would work out a plan by which the smaller hospitals and certain special hospitals could contribute their share in the work of training nurses and thus form part of a really comprehensive and national scheme, they would go far to overcome the difficulties which I have mentioned. This might be done either by grouping the smaller hospitals in convenient areas, or by their affiliation, where possible, with a large teaching hospital, or by a combination of both methods.

In any case there is urgent need for the General Nursing Council to come to the aid of the smaller provincial hospitals.—I am, etc.,

E. N. NASON,
Surgeon to the General Hospital, Nuneaton.

December 15th.

THE GENERAL PRACTITIONER AND THE MATERNITY SERVICE.

SIR,—Judging by your leading article on this subject in the issue of November 15th, you were concerned at the apparent apathy of the general practitioner, and by the fact that he was less articulate than usual. Do you not think that he has somewhat changed in this latter direction of late years, and for the better, and that the change is due to his weariness with the more or less constant demands for a higher and still higher standard, verging on the impossible, in every branch of his work, and added to this the frequent complaints and threats which even the most conscientious panel practitioner cannot hope to avoid? From being ultra-sensitive he has developed a protective thickening of skin, and is not so quick to rush into print when reflections are cast on his skill or benevolence.

I have reason to believe that the general practitioner, as never before, is anxious to do his duty by his patients in this very matter, that his sense of responsibility is great, and that he gives a deal of thought to this problem. In our present state of knowledge it is wrong to put down all or nearly all cases of puerperal infection to insufficient care on the part of the doctor or midwife at the confinement. The environment is often to blame. The problem will need a somewhat different solution in the case of large populous centres (with their ante-natal and maternity departments under obstetricians who have at their back laboratories where bacteriological and chemical investigations can be made at once) from what it will require in the country districts. The matter will be much more easily dealt with in the former case than in the latter, but as my life has been spent in the country, I shall confine my remarks to it. I may, however, interject that the training given to students in obstetrics about thirty years ago was very insufficient, and I believe that it is still, in the main, insufficient. It still seems to be the Cinderella of the medical curriculum.

In the country the most important thing is to have a complete network of district nurses of a good class and well trained in ante-natal care and midwifery. There are still too many gaps in the countryside without a nurse, and in many cases the districts are too large. I consider that the services of a doctor are quite unnecessary in the majority of multiparae, but that the nurse must be able to rely on the immediate help of a doctor when she needs one. In most ordinary cases patience is the one thing needed, and the nurse has more of this than the doctor and has also the time, which the doctor has not. There are no statistics available, but there can be little doubt that

forceps cases are only a fraction of what they were twenty years ago, when most cases had to be attended by a doctor.

Next in importance is the provision of a maternity ward, however small, in the hospitals of the small towns all over the country. A parturient woman is the most unwelcome patient that can be sent into one of these hospitals at the present time.

Isolated doctors still struggle single-handed, or sometimes with the aid of a colleague, fetched from a long distance, with cases of placenta praevia, accidental haemorrhage, transverse and breech presentations, in the most insanitary surroundings, without even a nurse or such common conveniences as a moderately decent lamp or a sufficient supply of clean hot water. Were these same doctors to meet an equally dangerous and urgent case of any other condition calling for surgical intervention, they would send it at once, in an ambulance or covered car, to hospital. They would gladly do this for the labour case, but they know she would not be welcome because no provision is made for such in the average small hospital. I can recall several cases where immediate removal to hospital would almost certainly have saved the mother's life. There is one maternal death for every 240 births, and the mother of six to eight children (a usual family in the country) incurs a risk of about 1 in 40 to 1 in 30 in fulfilling her duties; yet there is little or no hospital provision made for her should she develop any of these grave obstetrical risks.

All acute abdominal emergencies are instantly sent to hospital, even when the trouble is in a woman of the oldest profession and due to gonococcal infection. All these are rightly sent in for immediate surgical treatment under the best conditions, but there appears to be no provision for dealing similarly with the decent wife of a labourer in the country who may have developed an equally grave condition in her confinement.

From the hospital's side it is mainly or altogether a matter of finance, as in most cases it would mean some extra building. Otherwise the expense would not be great, for the matron or one staff nurse could have the certificate of the Central Midwives Board in addition to the usual qualifications.—I am, etc.,

Sherborne, Dorset, Dec. 8th. T. MACCARTHY.

TONSILLECTOMY.

SIR,—The aim of the surgeon at the present time is to remove the tonsil of the child, as completely and as cleanly as possible, with the least risk to the patient from the anaesthetic and from subsequent sepsis and scarring, and with the minimum loss of blood. Mr. T. B. Layton's opinion is that this can be done by the guillotine only. If that is so then some good reason must be found why some laryngologists have, partially or wholly, abandoned the guillotine in favour of dissection. One cannot imagine that they have failed to master the manipulations of the guillotine, and therefore have resorted to the more difficult operation of enucleation by dissection.

Further, if their results from dissection are such as Mr. Layton describes, surely common sense alone would have led them to give it up.

Still they continue to enucleate by dissection. Why is it? Because dissection in skilled hands prevents bleeding without any added risk to the patient, whilst the guillotine causes useless loss of blood. The whole idea of dissection, as I understand it, is to clamp and tie the main blood vessels to the tonsil as the operation progresses, so that the only haemorrhage is from the capillaries of the capsule as it is scratched through with a fine-toothed dissecting forceps. Therefore I cannot understand Mr. Layton's statement that there is more haemorrhage in dissection, unless he means in unskilled hands, when anything is possible.

To my mind the whole question turns on whether haemorrhage is to be allowed to continue till it ceases of its own accord, or whether it is to be prevented by pressure on the tonsil bed or by ligature of vessels. If the haemorrhage is of no importance then enucleation by the guillotine under ethyl chloride, skilfully administered, is the operation of choice. A small piece of tonsil may occasionally be left, but as a rule it causes no trouble, at least at the time. If, on the other hand, complete enucleation is desired with practically no bleeding, then there is but one method, and that is dissection with ligature of the vessels under oxygen and ether anaesthesia.

In skilled hands there need be no septic after-complications and no scarring, and no more risk from the anaesthetic than in any other operation. The application of pressure to stop bleeding after removal by the guillotine is uncertain in its results, and, however dry the tonsil bed may appear before the patient leaves the table, cases occasionally arise where haemorrhage has recurred—or, to be more correct, has continued—and the only evidence may be pallor followed by vomiting of a large amount of bright red blood. Then comes the question of how to stop it. Children bitterly resent the application of a tonsil clamp, and the introduction of sutures through the pillars and bed of the tonsil is a most painful procedure without an anaesthetic, and scarring almost certainly results. We are therefore left with the alternative of a second anaesthetic in a child already suffering from shock, and ligature of the bleeding point, which would have been done at the time if dissection had been employed.

Even if none of these treatments have been necessary and the bleeding has ceased on propping up the patient, the child takes some time to get over the loss of blood, and cases have occurred where the effects have been very serious. I have kept a record of the blood lost in many hundreds of cases of enucleation by the guillotine, and in some of them the quantity has appalled me. I am sure that many do not realize the amount that is lost.

Of course, the technique of dissection is more difficult to acquire; much practice is necessary to learn to ligature the vessels rapidly, and here the skilled help of a regular assistant is invaluable. A highly skilled anaesthetist is essential, but he may at the same time act as assistant.

Everyone admits that the tonsillotomy of pre-enucleation days was very successful so far as we know, and that the more expert the surgeon the more tonsillar tissue he removed. In those days the aim was to remove as much of the tonsil as possible, for the same reason as we enucleate now, because the extent of the disease could not be diagnosed before operation then, any more than it can now.

It is sometimes difficult to decide that the tonsil is diseased. I venture to prophesy that the unnecessary waste of blood by the guillotine method will be the direct cause of dissection being generally adopted by the laryngologists of the next generation.—I am, etc.,

Nottingham, Dec. 12th. H. BELL TAWSE.

SIR,—Before this correspondence ceases may I emphasize three points?

1. The great advance in guillotine technique during this past decade owing to the development of the "reverse" method. Many people in discussing the value of the guillotine base their opinions on their recollection of guillotine operations in pre-war times, when the percentage of tonsils cleanly enucleated by this method was under 50. Sluder now claims 99.6 per cent. of complete enucleations for this method—"after real skill has been acquired"—and he is not far wrong. Certainly the percentage of children's tonsils should be 99, and not far short of that for adults.

2. The necessity for practice in acquiring skill with the guillotine. It is like learning golf. No matter how good an athlete a man may be he must practise the golf swing over and over again. He must take out his club and half a dozen balls and play his shot over and over again. After many months he gradually develops the knack of hitting the ball cleanly every time. When he has learned to play a good game he can keep it up with occasional practice. So with the guillotine—repeated practice is necessary in the beginning. The operator must repeat the movement hundreds of times on all types of tonsil before real skill is achieved. Skill in dissection of tonsils is more rapidly gained than skill with the guillotine.

3. The modern guillotine method is that of Whillis and Pybus. The use of the finger to evert the tonsil into the ring of the guillotine was the kernel of their paper published in 1910, and it is the kernel of guillotine enucleation to-day. The essential feature of Sluder's method, as

described in his paper published in 1911, was the use of the "alveolar eminence on the mandible to stuff the tonsil through the ring." The use of the finger is alluded to only as a secondary procedure recommended for occasional use in dealing with flat fibrous tonsils. In his latest book (1923) Sluder recommends the use of finger eversion in *all* cases. Although the American school deserves great credit for developing and popularizing the reverse method of tonsillectomy, let us render honour where honour is due and call the method by the names of Whillis and Pybus of Newcastle.—I am, etc.,

Guildford, Dec. 14th. T. B. JOBSON.

THE DIAGNOSIS OF PNEUMONIC PLAGUE.

SIR,—The importance of establishing the diagnosis between plague complicated with pneumonia and pneumonic plague can hardly be exaggerated from the point of view of the medical men and the nurses attending the case; yet it seems to be far from easy. Medical textbooks for the most part fight shy of the point, and content themselves with the remark that pneumonic plague is peculiarly fatal to those in attendance. Indeed, they leave one to suppose that until a doctor or a nurse dies one has really no right to make a diagnosis of pneumonic plague. Yet these latter would prefer to have the diagnosis established before their own death, and it is in these circumstances that I am writing to inquire of your numerous readers whether it is possible to make a diagnosis in a given case.

Manson's *Tropical Diseases* gives no help. Stitt thinks that plague complicated with pneumonia is the origin of, if not identical with, pneumonic plague. Wu Lien Teh, writing in the *Practice of Medicine in the Tropics*, says the diagnosis is usually clear from the bacteriological examination of the sputum, in which the bacillus is found in enormous numbers and in almost pure culture. If one accepts his method of diagnosis, then indeed bubonic plague complicated with pneumonia or vice versa is indistinguishable from pneumonic plague in a large number of cases.

What of the cases of plague in which a bubo is the only outward and visible sign of the disease, but in which a lung puncture or *post-mortem* lung smear shows *B. pestis* in pure culture? What, too, of those cases without buboes in which no physical signs are present in the chest until just before death, but in which *B. pestis* is found in the blood in life and consolidation, slight or gross, is found after death and a lung smear gives a pure culture of the bacillus? It is true one can take refuge in a terminological harbour and apply the word "septicaemic" to both these cases; but this hardly advances us along the line of discovering wherein they differ from pneumonic plague—so called. No one as yet has denied the existence of *B. pestis* in the blood in pneumonic plague, and for my part I cannot conceive of pneumonic plague being other than septicaemic in its final stage.

A point of close resemblance between plague-cum-pneumonia and the pneumonic plague of the textbooks seems to be that both are absolutely and equally fatal. The first sign of chest trouble in a case of mild bubonic plague appears to be comparable with the death token of the Middle Ages. At least the result is the same.—I am, etc.,

Lagos, Nigeria, Oct. 24th. N. A. DYCE SHARP, West African Medical Staff.

TREATMENT OF GOITRE BY IODINE.

SIR,—Dr. Joseph's communication (November 22nd, p. 975) on the treatment of goitre by iodine is interesting. I am sorry he has not given the minor details and precautions that he says are necessary for success. This subject is far from clear, and details may prove to be of the utmost importance. I can add my testimony to the success of syrup of the iodide of iron in these cases. This is a most useful drug in other cases too. It is most valuable in enlarged glands of the neck. Does the iodine stimulate the thyroid—the defensive gland of the body—and thus cause the enlarged cervical glands to disappear? I feel sure if this preparation was more frequently used there would be fewer tuberculous glands of the neck.

Cases of simple goitre are, I am sure, an enlargement of the gland to supply more iodine for the requirements of the body. From these two classes of cases iodine would appear to act in a double way: it seems to stimulate the thyroid, and also to supply the iodine that is deficient. I believe we have in nux vomica a drug that stimulates the suprarenals.

In giving syrup of the iodide of iron to children many years ago I was struck by the remark so often made by the mothers that the child's appetite was much improved. Other medical men whom I spoke to also tried it in pale children with loss of appetite; and it proved successful in their hands. Later I came to the conclusion that these were cases of subthyroidism; and after the course of the syrup they got a good appetite, put on flesh, and had a healthy appearance. The failure of the syrup in Graves' disease is what one would expect. It is a different disease—sympathetic in origin—and not due to iodine insufficiency.

People living in the same district, eating the same food and drinking the same water do not all develop goitre. Is it that some people require more iodine than normal people? It cannot be that they have not the power to assimilate it, for when given in the syrup of the iodide of iron they get better.

We get the physiological enlargement in young girls about the age of 14 years. Is more iodine required then, and, if so, why? Why also do we see it so seldom in the male sex? In treatment I would advise the giving of very small doses.—I am, etc.,

Southsea, Nov. 24th. D. MCASKIE, M.B.

EXERCISES FOR THE PELVIC FLOOR MUSCLES IN DYSCHEZIA AND PROLAPSE.

SIR,—The interesting and instructive paper with cases by Dr. Stacey Wilson on the cure of uterine prolapse by re-education of the muscles constricting the vagina (December 6th, p. 1041) vindicates completely the conception of the necessity for and the sufficiency of the pelvic floor muscles for the pelvic visceral retention. For although Dr. Wilson refers to the muscles, the disability of which is the predisposing cause of uterine prolapse, as "vaginal" muscles, and speaks of the "vaginal sphincter" in this respect, it is quite clear that it is not the "constrictor cunni" but the levatores ani which are affected by the exercises. The muscular compression exerted upon the fingers when during vaginal examination the patient, in response to a request, contracts the parts is due to a contraction of the levator ani muscles, especially of their median parts, which form the postero-lateral parts of the pelvic floor aperture through which both the vagina and rectum pass to quit the pelvis. This important part of the levatores ani, known as the pubo-rectalis, was called by Holl the sphincter recti, from its effect on the rectum. Passing from the pubes by the sides of the vagina to behind the anal canal, where the belly of one side runs into that of the other without intermediate tendon and without attachment to the ano-coccygeal raphe or the coccyx, on contraction it compresses the anal canal against the pubic arch, and in doing so necessarily compresses the vagina at this level which is placed in between. Thus, Dr. Stacey Wilson tells us that the voluntary contraction of these "vaginal" muscles, instrumental in the retention of the uterus, is induced by asking the patient to tighten herself up "as if she were endeavouring to control a sudden attack of diarrhoea."

Of course, with such a movement, the sphincter vaginae (that is, the constrictor cunni), when intact, is probably involved; but this movement occurs even in cases of complete rupture of the perineum—that is, in cases in which the two halves of the constrictor cunni are separated from each other posteriorly, and in consequence of which their effect on the vulva as a constrictor must be absent or negligible. Dr. Wilson has shown that even in such cases as the result of the exercise of frequently tightening herself up—in the beginning "many times during every hour of the day"—the patient "may nevertheless be able to maintain her uterus (previously extruded) in its normal position without the need for a pessary. . . ."

Not only do the cases Dr. Wilson cites support this conception, but the remarks of Dr. Arthur Hurst and of Dr. A. Adams (in your issue of December 13th, p. 1136) also do so. Dr. Hurst mentions a case of rectal prolapse treated successfully in this way; Dr. Adams refers to the "undue passivity" of many women "in regard to their sexual feelings." Dickinson long ago stated that the levator ani is especially well developed in erotic women; and that the muscle is in a better state than normal in cases of bowel incontinence from complete perineal laceration is an observation which can be made every day. Women of the former type actively participate during coitus, during which in the normal the levator ani muscles of the woman grasp the organ of the male. That in cases of complete perineal tear the levator should be in constant use is intelligible from the effect of the lesion of the bowel. These women are constantly tightening themselves up to prevent the unexpected escape of gas and even of faecal material.

But there is another point which should not be missed. Important as the levator ani muscles are in the matter of the pelvic viscera retention, they are even more important in virtue of their effect on the body as a whole. Thus, Dr. Wilson, in the notes of his first case, states that with the local improvement the patient's "general health also greatly improved." This simple statement requires elucidation. It is true that when the pelvic floor muscles are efficient they prevent extrusion of the pelvic viscera, but they do much more than this. By preventing the escape of visceral parts they enable the pressure within the pelvis and abdomen, in virtue of which the parts tend to escape, to be increased as it is in the normal during activity. Without great rises of the intra-abdominal pressure, great activity is not possible. Conversely, they allow, and even participate in determining, a good average pressure during resting states. Clearly, the condition of the body during rest is related to and corresponds with the degree of potential activity.

When the relation of the intra-abdominal pressure to general metabolism is realized, when it is recognized that this pressure is basal in the adequate return of blood per unit of time *to* the heart, and that on this (for one thing) the aortic blood pressure—and so, the blood flow through every organ—depends, much may happen. I prophesy a revolution in medical thought. I see on the one hand that neurasthenia (in which the intra-abdominal pressure is reduced), and on the other that eclampsia (in which the intra-abdominal pressure is increased), and perhaps that many other internal disorders (for example, acute nephritis and even convulsions in children) will be understood; and that the neglected levator muscles will be acclaimed as playing an essential part in many vital processes.—I am, etc.,

Rugby, Dec. 14th. R. H. PARAMORE, F.R.C.S.Eng.

WET WINDS AND EARLY PHTHISIS.

SIR,—In reply to Dr. Ward's letter (December 13th, p. 1140):

1. I have framed no "hypothesis." Anyone who has followed my work with reasonable care will have noticed how scrupulously I have avoided doing so. I have simply examined statistics and recorded conclusions.

2. To Torquay Dr. Ward does grave injustice. Much of it is sheltered from westerly winds, and I have a high opinion of its value.

3. When Dr. Ward describes my statistics as "malleable" he displays a remarkable want of attention in his reading. The most outstanding fact about these statistics is the apparent unavoidability of the conclusions I have drawn.

4. Dr. Ward's criticism of my able collaborators seems *une mauvaise plaisanterie*.

5. I have laid down no "axiom." My conclusions as to limits of shelter are plain deductions from my material.

6. In the very paper we are discussing I have thankfully acknowledged the great help afforded me by Dr. Brownlee's independent investigation in 1920, in the districts of Barnstaple and Okehampton, and, lately, by the independent investigations in West Shropshire by Dr. A. C. Watkin, and in Derbyshire by the medical superintendent of the County Sanatorium. Independent inquiry is what I have always desired. Independent inquiry is what I am now asking for all over the country. May one hope that it may be undertaken soon and widely?—I am, etc.,

Exeter, Dec. 15th W. GORDON.

THE LATE PROFESSOR J. I. HUNTER.

SIR,—I should be very grateful if you would correct certain errors which, through my own carelessness, were made in the obituary notice of Professor John Irvine Hunter.

The name of the journal in which the Murphy Oration is being published (see reference on page 1183 at the top of the first column) should be *Surgery, Gynecology and Obstetrics*. The date of Professor Hunter's departure from Sydney (see page 1181 at the bottom of the second column) should be August, 1921, and of his return February, 1923.—I am, etc.,

London, Dec. 18th. G. E. S.

Medico-Legal.

A CHARGE OF SEDUCTION DISMISSED.

AT the Birmingham Assizes, on December 16th, a special jury dismissed a claim brought by Mr. Thomas Morley of Saltley against Mr. K. M. Pardhy, F.R.C.S., of Newhall Street, Birmingham, for damages for the alleged seduction of his daughter, Mary Margaret Morley, aged 16. Mr. Justice Lush, in the course of the hearing, raised the point as to whether an action for damages could be brought for what was, after all, the felony of rape, without first vindicating justice by a prosecution for rape. Mr. Vachell, K.C., who appeared for the defendant, said he had not raised the point because Mr. Pardhy did not desire to shelter himself behind anything that savoured of a technicality.

The plaintiff's daughter, in her evidence, said that on February 20th, 1923, she went with her mother to the Homoeopathic Hospital, Birmingham, for treatment. They waited two hours, and at about 2.50 p.m. they were shown into a room where the defendant was alone. After a conversation, they were told to go to the other side of a heavy green curtain, reaching to the floor, which divided the room. There the witness partly undressed, and after an examination, which took place while she was on a table, her mother was told by the defendant to go to the other side of the curtain. After her mother left the room the witness was told to leave the table, and she was provided with a stool to lean over. A blanket was placed over her shoulders. A little later the defendant washed his hands, and she was given a card to go to the dispensary. She did not know anything was wrong until she gave birth to a child on November 10th, 1923; she was working at a factory on November 9th.

The plaintiff's wife, in her evidence, said she accompanied her daughter to the hospital on February 20th, 1923. After the examination of her daughter had proceeded for a little while the defendant asked her to go and sit down. There was only one chair, and that was on the other side of the curtain which divided the room, and the witness went there. She sat there reading a book, and heard nothing at all to arouse her suspicions that there was anything going on. She sat there for ten minutes to a quarter of an hour, and then the defendant came out and asked her a question about certain marks on her daughter's neck and forearm. Then the defendant asked her to help her daughter dress, and witness did so.

Dr. W. T. James of Bordesley Green gave evidence of the confinement, and said he thought the baby was an Oriental—not a Japanese, not a Chinese, not a negro. Witness had a conversation with the mother and then saw the defendant, who looked flabbergasted when he heard the suggestion that he was the father. The birth of the baby was consistent with intercourse having taken place on the date of the girl's visit to the hospital, but equally so with intercourse having taken place in the last week in January (when the girl was on holiday at Weston-super-Mare).

Mr. Vachell, opening the case for the defence, said Mr. Pardhy was a well born native of India, a Brahmin. His father was a celebrated Indian judge. He came to this country somewhere about 1900, having previously served for a short time in the medical service in the South African war. Here he became a Fellow of the Royal College of Surgeons and L.R.C.P. He was 50 years of age, and had married a lady who stood fast by his side in the case. In 1910 he became surgeon to the Birmingham and Midland Homoeopathic Hospital, a post he had held ever since. Throughout the whole of 1923 he was, on two days a week, seeing out-patients in the afternoons, it being quite usual for him to see from eighty to ninety patients in one afternoon. No one but a lunatic would have attempted to do what it was alleged the defendant did in the teeth of almost certain detection.

Mr. Pardhy, in evidence, said he had no personal recollection of the girl's visit—he saw thousands of persons—but he found notes of the case he had made in the register he kept. The mode of examination he adopted he had practised for the last twenty years,

and it was a well recognized method for cases of that sort. During his work he was liable to interruption. Colleagues from the next room came in frequently to ask his opinion about a case. The matron, or nurses, might come in, the house-surgeon might come in. Messages were brought in, and there were telephone calls to be answered. The curtain was not a thick one. At that hospital no nurse was ever present during the examination of out-patients.

Cross-examined, he did not recollect, but if he did ask the mother to sit down on the other side of the curtain she must have been in his way. He had employed private inquiry agents, but they had not been able to find any coloured person, other than himself, with whom the girl had had anything to do.

Dr. Thomas Wilson, professor of midwifery and diseases of women, Birmingham University, said the procedure used by the defendant appeared to him to be in accordance with the routine and custom of the special branch of the profession to which he (the witness) belonged. If the allegation were true, he could not conceive of the mother not knowing what was happening; for the girl not to know was not impossible, but seemed incredible.

Mr. Justice Lush, summing up, directed the jury's attention to three remarkable things: first, it was a part of the plaintiff's case that an educated, clever man, who would know what he was doing and the risks he ran, was willing, in order to gratify his lust, to commit this wicked crime on a young girl while her mother sat about two or three feet away, with nothing dividing them but a curtain, and when a single word or cry would have brought her to the girl's side; secondly, that the girl who was said to have been treated in that way never imagined for nine months that the doctor had had relations with her; thirdly, that the girl, having become pregnant, went right down almost to the moment of childbirth without having the slightest idea that anything unusual in a physical sense had happened to her.

The jury, who had viewed the consulting-room at the hospital where the intercourse was alleged to have taken place, and who had been shown the baby, returned a verdict for the defendant, Mr. Justice Lush observing: "I think it is right to say that I quite agree with your verdict."

Messrs. Le Brasseur and Oakley, solicitors for the defence, were instructed by the London and Counties Medical Protection Society.

Universities and Colleges.

UNIVERSITY OF OXFORD.

At a congregation held on December 17th the following medical degrees were conferred:

B.M.—R. J. Brocklehurst, T. A. J. M. Dodd, M. McCheyne Baird, J. R. B. Hern, P. H. Martin, J. D. Mills, B. E. Tompson, A. T. Fripp, H. N. Stokoe, Mathilde E. F. Bugnion.

UNIVERSITY OF CAMBRIDGE.

DR. A. J. COPELAND (Pembroke College) has been appointed assistant to the Downing Professor of Medicine.

At a congregation held on December 19th the following medical degrees were conferred:

M.B., B.CHIR.—A. L. Walker, A. V. Pegge, E. C. Rayner, B. E. Schlesinger.
M.B.—J. R. B. Dearden, E. B. Brooke, S. Orchard, G. C. Millis.
B.CHIR.—H. E. Harris.

The following candidates have been approved at the examinations indicated:

THIRD M.B., B.CHIR.—*Part I. Surgery, Midwifery, and Gynaecology:* F. N. Adams, C. Adamson, N. F. Adeney, G. L. Alexander, R. D. Alexander, T. F. Anderson, W. A. Bourne, H. F. Brewer, W. Brockbank, A. D. Briscoe, B. H. Burns, W. E. Chiesman, W. R. F. Collis, J. W. E. Cory, J. E. D. Crozier, R. W. Cuningham, C. H. C. Dalton, G. H. Day, F. M. Deighton, M. S. Dewhurst, R. H. Dyer, H. W. Eddison, J. L. Edwards, J. H. Gaddum, N. T. Glynn, H. G. Goldwater, H. F. Griffiths, K. E. Harris, J. Holmes, W. Hunt, J. J. Keevil, M. C. H. Kingdon, A. R. Lister, D. P. Marks, L. P. Marshall, J. G. Milner, W. J. Montague, M. F. Nicholls, L. J. Panting, P. E. Pym, W. Richards, D. Riley, J. Russell Smith, F. R. Sandford, A. de M. Severne, A. J. Smyth, E. W. P. Thomas, E. J. E. Topham, E. A. Trim, J. G. E. Vacheli, T. E. Walsh, A. G. Walter, H. A. Ware, J. L. Warner, and Miss I. M. Harmer.

Part II. Principles and Practice of Physic, Pathology, and Pharmacology: P. E. Bardsley, A. Barker, W. S. C. Copeman, R. Cove Smith, W. I. Daggett, J. H. Doggart, H. G. English, M. W. H. Evans, R. B. Fawkes, J. A. Galetly, W. H. Gervis, T. S. Goodwin, J. Gray, F. N. Green, H. E. Harris, K. E. Harris, B. D. Hendy, R. A. Highmoor, F. D. Howitt, P. W. Jamie, A. A. Lees, W. A. Lister, S. M. Milner, E. G. Morris, A. C. Mowle, H. B. Padwick, T. M. Preece, R. H. T. Rea, W. G. Scott Brown, F. A. H. Simmonds, T. H. Sims, J. D. M. Stewart, G. B. Tait, G. L. Thompson, J. H. G. Thompson, G. B. W. Walker, H. Yates.

UNIVERSITY OF LONDON.

THE PARLIAMENTARY ELECTION.

DR. E. G. LITTLE was entertained at dinner on December 16th by the University of London Graduates' Association to congratulate him on his election as parliamentary representative of the University. Sir W. J. Collins, the founder of the association, who was in the chair, presented Dr. Little, on behalf of the association, with an illuminated address in commemoration of his election, "irrespective of party politics, and in vindication of the policy of the University of London Graduates' Association, for the maintenance and development alike of the teaching work of the University and its open system of examination, without intervention by external agencies unacquainted with its history and progress." The toast of Dr. Little's health was proposed by Captain J. A. Douglas, chairman of the Association of Parliamentary Election Petitions. In his reply Dr. Little said that the fight at first had seemed a forlorn hope, but it was an occasion for going on with the twenty-year struggle to maintain the principles on which the University was founded. Throughout the world and in every profession a large number of men and women cherished the warmest affection for it. In response to the toast of the colleges and schools of the University, the Principal of King's College said that neither he nor, so far as he knew, any other principal officer of a college was in favour of the cardinal principle of the Haldane Commission or, indeed, of many of its subsidiary principles, or would desire to see most of its recommendations enforced, whether with regard to the position of external students or to the constitution of the Senate. The health of the chairman was given by Sir William Willcox and suitably acknowledged.

The following candidates have been approved at the examinations indicated:

M.D.—*Branch I (Medicine):* E. A. Coldrey, C. M. Gwillim, R. Hunt Cooke, C. G. Lewis, I. Lewis, B. Maclean, B. S. Nissé (University Medal), D. C. Norris, O. W. Roberts, Kathleen A. H. Sykes, R. S. Thodkar. *Branch IV (Midwifery and Diseases of Women):* B. L. Jeaffreson. *Branch VI (Tropical Medicine):* M. L. C. Irvine.
M.S.—*Branch I (Surgery):* O. S. Hillman, D. Levi.

VICTORIA UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—R. S. Adam, J. K. Barr, C. E. W. Bower, C. V. Brown, Stella H. Brown, Elsie Catlow, W. Chadwick, S. F. Clegg, Jenny D. Craig, Mary S. Davies, T. E. Davies, S. Devine, Florence M. Duckworth, C. Eccleston, J. D. Farquhar, L. Fay, R. A. Ferguson, Anne H. Glancy, G. H. Hayle, A. H. Heyworth, J. N. Hudson, Elizabeth G. Humble, P. G. Johnson, A. M. MacGill, H. T. Simmons, A. B. Slack, R. Slater, A. R. Somerford, R. Walshaw, S. E. Ward, H. Whittle, R. M. Williams, S. P. Wilson, F. Yates, J. M. Yoffey. *Forensic Medicine and Hygiene and Preventive Medicine:* Madge E. Edwards, Ethel Morris. *Forensic Medicine:* A. R. Addey-Redfern. *Hygiene and Preventive Medicine:* W. Mottershead, S. Whalley, P. B. Wood. *Obstetrics and Surgery:* C. H. Bamford, S. Bernstein, N. W. Bolton, Lilian Bond, G. H. H. Booth, G. Coope, J. Crook, T. A. Danby, A. A. Davis, N. E. Delaney, Kathleen Dickenson, L. F. Evans, Mary Evans, Miriam Florentin, J. B. Fulton, E. A. Gerrard, E. St. G. Gilmore, Riad Girgis, Mary Harburn, May Johnson, W. Johnson, J. T. C. Keddie, Barbara M. Knight, G. F. Langford, G. H. March, C. T. Marshall, E. A. Marson, S. L. Mucklow, R. M. Pearce, A. Pearson, Joan Robinson, M. R. Sagar, N. F. Seed, W. H. Shepley, J. Shlosberg, Agnes G. Smiley, *F. H. Smirk, Lois Stent, Jane B. Stubbs, J. Viljoen, J. C. Wilson, R. Wood, N. A. J. Young. *Obstetrics:* Frances H. Bowden, T. K. Clifford, S. J. Firth, I. H. Freedlander, T. S. Hanlin, E. P. Johnson, W. D. Mitton, F. Reynolds, B. R. Sandiford, A. D. Shubsachs, W. S. Slater.

* Distinction in Obstetrics.

UNIVERSITY OF SHEFFIELD.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—J. R. Baker, M. J. Finklestone, Alys M. Gregory, Josias W. Jago, O. H. Swede, Margaret Wesley.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—*Materia Medica, Pharmacology and Pharmacy, Public Health, Medical Jurisprudence, Pathology and Elementary Bacteriology:* M. Coll, Dorothy E. Crisp, R. R. Dodd, Mabel Dodds, W. L. Fulthorpe, Dorothy Hopkinson, J. A. Livingston, L. Livingston, G. M. Macintyre, M. A. S. Marxai, A. T. H. Marsden, H. O. Martin, E. H. Moseley, J. Niman, M. A. Phillips, R. H. Robinson, Phyllis Routledge, R. Russell, E. P. Tulloh.

UNIVERSITY OF EDINBURGH.

A GRADUATION ceremonial was held in the M'Ewan Hall on December 19th, when the following degrees were conferred:

M.D.—Captain F. C. K. Austin, R.A.M.C., L. C. L. Averill, J. Brown, *N. S. Craig, †D. R. Cramb, *A. M. Drennan, A. D. Edington, †Jessie Eeles, J. W. Gray, J. S. Harris, F. T. Ingram, †J. M'Garrity, D. S. Robertson, Hilda D. Scott, †Muriel J. Thomson.
D.Sc.—C. W. Stump, M.D.
M.B., CH.B.—H. Addison, W. Aitchison, S. H. Aung, B. N. V. Bailey, Evelyne E. Baird, Mary E. Barr, G. Beveridge, A. E. Blackley, D. W. N. Blackmore, J. F. Bland, A. F. Brown, A. J. Cameron, L. G. Campbell, V. F. T. Chan, M. Clouts, R. M. Condie, J. G. Cormie, D. J. M'A. Corner, T. A. Crawford, G. A. Davies, J. Douglas, Lillian R. Duffy, J. N. Dugdale, N. Duguid, D. S. Fairweather, A. L. Ferguson, R. C. Forrester, D. Fourie, Matilda E. Fowlie, A. Fraser, A. M'L. Fraser, D. L. Frew, T. D. Glaister, J. Gray, C. B. Grieve, D. Gunn, R. B. Guyer, E. A. Haslam-Fox, W. Henry, Anna M. Herdman, C. W. Ho, R. Hutchinson, B. James, J. W. Keighley, W. D. Kiernander, G. M. Lamb, A. Lazarow, K. M. M'Cracken, H. L. Mackintosh, A. Macrae, J. C. M'Vittie, M. S. Malone, A. L. Masterton, V. W. Maxwell, Margaret M. Meikle, J. F. Menzies, R. H. Mumford, Lilian M. S. Murray, W. Nelson, R. Norton, R. C. Ogg, A. Owen, W. Parker, F. S. Paterson, A. L. Phimister, C. K. Robertson, J. A. Robertson, Elsie T. D. Robson, R. J. Rodger, Christina B. Ross, R. Ross, N. D. Sanderson, H. Schulgasser, G. Simpson, J. K. Slater, M. Sokolovitch, M. E. J. Stalker, W. E. Stober, Agnes E. Stothard, G. S. Strachan, J. C. Tainsh, K. H. Tepper, N. J. Terblanche, A. G. Thomson, R. M. Thomson, P. R. Tingley, Dorothy M. Wilkie, B. O. Wilkin, J. Wilkinson, Ada M. Woods, M. H. Wright.

* Awarded gold medal for thesis. † Highly commended for thesis.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examinations indicated:

M.D.—E. N. Chamberlain, A. R. Jones.
M.CH.ORTH.—E. B. M. Vance.
FINAL M.B., CH.B.—*Part III:* B. E. Acland, M. M. F. Arthur, P. D. Barling, T. Bellis, E. C. Benn, T. A. Clarke, H. A. Cole, R. Cotter, W. R. H. Ellis, E. A. B. Evans, C. G. Foxcroft, G. A. Fulton, J. Gaughan, Clara M. V. Gleave, H. Gobie, M. Godwin, W. J. Griffiths, A. D. Harper, L. F. Henry, Bertha H. Irvine, E. W. Johnson, C. P. Jones, G. F. Kinder, B. D. Knoblauch, *Sarah Leigh, A. Oseroyitz, R. D. Owens, J. T. C. Roberts, C. Sharp, R. S. Turner, G. R. Wadsworth, T. W. White. *Part I:* J. L. Clegg, J. C. Edwards, A. B. Follows, J. F. Galloway, Elinor M. Gelling, M. Goldberg, Elizabeth M. Harding, D. G. Henry, B. S. Jarvis, A. N. Jones, J. S. Logan, M. A. Lombard, D. B. Macaulay, G. McLoughlin, †R. M. Maher, F. Murgatroyd, A. V. Russell, M. R. Sheridan, J. E. Wallace, R. G. Walmsley, Kathleen M. Ward, Nora M. Wilson. *Part II:* Alice M. Luck, Isabel McKee, D. J. T. Magowan, J. Morrissey, Irene M. Neal, Mary T. Penrice, W. J. Pierce, Thirza Redman, D. Roberts.
DIPLOMA IN TROPICAL MEDICINE.—H. S. Bilimoria, ‡B. L. Davis, C. B. Jennings, S. W. S. Lee, G. Macdonald, J. M. Mitchell, D. U. Owen, Beryl Palmer-Jones, E. J. Sankeralli, H. Singh.

* With distinction in surgery. † With distinction in pathology.
‡ Recommended for the Alan H. Milne medal.

UNIVERSITY OF DUBLIN.

AT the winter commencements, held in the Theatre of Trinity College on December 11th, the following degrees and licenses in medicine, surgery, and midwifery were conferred by the University Caput in the presence of the Senate:

M.D.—D. J. Malan, W. F. Whaley.
M.B., B.CH., B.A.O.—J. N. Atkinson, Dorothy J. Booth, M. J. Bradlaw, J. R. Bradshaw, W. A. Dickson, E. Harvey, A. J. Head, Dorothy I. Henry, R. F. J. Henry, L. S. Levitt, S. M'Dermott, R. H. M'Keag, S. E. Magowan, W. H. Maguire, T. W. May, A. J. Mooney, P. D. Piel, G. D. Rankin, I. Rosin, L. P. Sayers, M. Sless, W. D. Speedy, R. E. Steen, R. G. F. Thompson, R. Warnock, Sylvia B. Wigoder, C. Wilson.
LICENCE IN MEDICINE, SURGERY, AND OBSTETRICS.—L. MacS. Bell.

SCHOOL OF PHYSIC, TRINITY COLLEGE.

The following candidates have been approved at the examinations indicated:

FINAL EXAMINATIONS, PART II.—*Medicine:* *R. Warnock, *A. J. Mooney, *L. MacS. Bell, *T. W. May, *I. Rosin, J. N. Atkinson, M. Sless, S. M'Dermott, T. G. B. Crawford, E. T. S. Rudd, N. G. M'Auliffe, W. A. Dickson, R. E. Steen, Agnes L. Kelly, S. E. Magowan, M. J. Bradlaw, J. F. Wilde, L. P. Sayers, Sylvia B. Wigoder, H. Birney, R. H. M'Keag, Paul D. Piel, Dorothy I. Henry, R. J. G. Hyde, J. G. Maguire, C. R. Moore, G. D. Rankin, I. Strasburg, W. H. Maguire, E. A. Bennet, Lucy E. R. Pigott, E. J. Walsh, C. Wilson, Angel V. B. Crawford, J. M. Johnston. *Surgery:* R. F. J. Henry, W. A. Dickson, T. W. May, W. D. Speedy, P. N. H. Labuschagne, R. H. M'Keag, L. P. Sayers, J. R. Bradshaw, W. H. Maguire, W. H. Anderson, M. Sless, J. L. Levingston, Dorothy J. Booth, P. D. Piel, R. W. Harte, G. D. Rankin, G. P. Bamford, G. F. Gillespie, A. J. Head, R. G. F. Thompson, E. C. Dudgeon, J. L. Marshall, J. Horwich, H. St. G. M'Kenny, J. Cussen. *Midwifery:* *Augusta M. Young, *Hope Trant, *J. R. Gregory, *O'D. T. D. Browne, P. Coleman, J. Dick, W. R. G. Gallagher, W. P. E. M'Intyre, E. Harvey, C. F. D. M'Caldin, R. A. Heatley, J. E. M'Cauley, E. J. Walsh, C. R. J. Boland, J. Craig, Gladys M. A. Lowry, A. D. M'Lean, Mary S. Miller, H. Tomkin, W. G. S. Maxwell, G. A. Miller, W. J. A. M'Mahon, J. V. Pincus, Dorothy A. M'Entire, Grace J. Rankin, G. P. Bamford, D. Bluett, J. J. Cusack, H. M. Nevin, J. C. C. Boyle, W. C. Somerville-Large, H. Nelson, Kathleen M. Ball, C. H. Wilson, D. J. Cussen, S. Gurevich, Norah M. Smith, Margaret E. Pedlow.

* Passed on high marks.

DIPLOMA IN GYNAECOLOGY AND OBSTETRICS.—W. T. Noonan, C. A. Nadicarianda.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following 24 successful candidates out of 55 entered, having passed the requisite examinations, have been admitted Fellows:

R. N. Ajinkya, T. F. Andrew, Captain P. K. Bardhan, I.M.S., E. J. Bradley, R. C. E. Brodie, C. J. Cellan-Jones, J. R. de W. Connolly, D. Cromie, C. M. Eynon, L. S. Fallis, C. K. Fuller, R. McM. Glynn, W. A. Jackman, A. Leeming, Major A. P. G. Lorimer, I.M.S., R. F. Matters, Major D. F. Murphy, I.M.S., E. R. Reay, L. C. Rogers, E. K. R. Thomas, V. H. Wallace, W. G. Waugh, Lieut.-Col. R. T. Wells, I.M.S., A. H. Whyte.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

DIVISION OF TROPICAL MEDICINE AND HYGIENE.

THE following medical officers have passed the school examination at the termination of the seventy-sixth session (September-December, 1924):

*†J. A. O'Flynn, *W. H. Dye, *C. F. Shelton, *D. Hynd, *A. I. Meek, *T. N. Banerjee, P. N. Suri, R. G. Griffin, J. R. Mallory, H. O. Watkins-Pitchford, Miss H. M. Caldwell, R. N. Khosla, R. K. Grant, D. Murray Young, H. C. E. Quin, M. A. El H. Gohar, G. Louw, H. B. Follit, M. de Bono, G. Robinson, R. F. Campbell, D. L. J. Kahawita, Milton C. Lang, Miss E. M. Closson, H. Goldberg, H. C. Hopkinson, C. E. G. Gill, M. A. Cassidy, W. H. Hart, D. H. C. Given, R. Sweet, Miss U. F. M. Morton, A. D. Williams, H. P. Hacker, J. Naudi, S. L. Navaratnam, D. M. de Silva, A. Y. Mankarius, R. J. Harley-Mason, P. H. S. Smith, K. R. Batra, I. Newton, A. E. Wall, S. Khan, T. C. Lonie, E. H. Evans, Miss M. C. Chappel, W. Bradbury, W. A. Bartholomeusz, Miss M. G. Sammons, F. McKernan.

* With distinction. † Awarded the Duncan Medal.

Obituary.

HERBERT WILLIAMSON, M.A., M.B., F.R.C.P.,

Physician Accoucheur to St. Bartholomew's Hospital.

HERBERT WILLIAMSON, whose sudden death is so great a loss to the Medical School of St. Bartholomew's Hospital, was in his 53rd year. He came to London from St. John's College, Cambridge, and characteristically determined to find out for himself which of the London schools he should join. He wandered and inspected several, but, as he often has recounted, when he looked through King Henry the Eighth's Gate and saw the fountain, the trees, and the flowers he felt his search was at an end, and he entered the school in which, save for a very brief period of less than a year, he always held an honoured place. For from the first months of his student days his exceptional powers were recognized alike by his teachers and his fellow students. The latter never had any doubt but that Williamson was marked out for success in whatever walk of the profession he should find himself. He obtained the M.R.C.S. and L.R.C.P. diplomas in 1896, and the M.A., M.B., and B.Ch. degrees in 1898. Naturally he was a prizeman, and after holding the post of resident to those brilliant surgeons Butlin and Lockwood, he became resident in the gynaecological wards. Sir Francis Champneys and Dr. W. S. A. Griffith, who were at that time respectively physician accoucheur and assistant physician accoucheur, were quick to recognize his merits, and though for a short time there was no opening for Williamson, he was remembered when the opening did occur, and came home from the South African war, where he was serving as a surgeon in the Imperial Yeomanry Hospital, to take up the position of midwifery tutor. In that capacity he served the school and the hospital for several years with so marked a success that in 1906 a fresh post was created in the department, and Williamson was elected to the staff of the hospital. He had already an extensive private practice, and this rapidly grew so that in a few years his opinion and his services were widely in demand. He was elected F.R.C.P. in 1911. He enjoyed his success, but still more he enjoyed his work. He was never so happy as in the service of the hospital and school, whether teaching or working in their interests in other ways. Indeed, in those years he took too little relaxation from the exactions of his work, and outside his regular holiday very rarely spared time for pleasure. He was not especially devoted to any form of sport; he was not a golfer, and seldom even gave himself a Sunday's freedom from work. Latterly his summer holidays had been spent in Cornwall, and there he had been accustomed to go for long walks. His physique was not robust, but he very seldom ailed, and his temperament was even and judicial. He was always the same delightful companion, enjoying and telling a good story; and his lectures and bedside teaching were often illuminated by sparkles of wit or humour.

As the years went on he became more and more trusted in the councils of the school and the hospital, and it is in that sphere as much as in any other that he will be greatly missed. Outside the hospital he had filled many important posts and always with distinction. He had always been a good speaker in public, but of recent years, since the war, had gained a reputation in this respect which, in the estimation of good judges, placed him in the front rank. His speeches at the octocentenary dinner of St. Bartholomew's Hospital in 1923, and at the dinner of the Royal Society of Medicine last year, were a delight to those who heard them and made his name familiar to many who had not previously known him.

He had not been in the best of health since the summer, but to most of his colleagues there was no sign of failing powers. Only to those who were most intimately associated with him in work was there any indication that he was feeling the strain. To the rest he appeared to be in full vigour, and his advice and counsel were as freely and judiciously given as ever. In November he had an attack of influenza and was distinctly pulled down by it. He went away for a short time to the seaside and returned apparently fit. A few days' work, however, was all that was left for him. On December 15th he did not feel up to undertaking his usual full day's work and went for a

walk in the Chilterns. His dead body was found the next day, and from the evidence he must have suffered from a sudden syncopal attack after climbing a hill.

His death leaves a gap in the ranks of gynaecologists, and will be deeply regretted by the many members of the profession to whom he was known, and by hundreds of private patients to whom he was not only a trusted physician but a valued friend. To his contemporaries, his colleagues, and the students of St. Bartholomew's Hospital, both past and present, there is a deeper sense of loss. Not merely have they lost one of the ornaments of the school, but they mourn the decease of a man whose deep love and devotion to his school was requited by a rare sense of personal attachment in all those with whom he mixed in their common life.

H. T.

CLARENCE COOPER, M.D., F.R.C.S.,

Deputy Surgeon-General I.M.S. (ret.).

DEPUTY SURGEON-GENERAL CLARENCE COOPER, Madras Medical Service (ret.), died at South Norwood Park, London, on December 18th, aged 94. He was born at Brentford, and was the son of George Cooper, F.R.C.S. He was educated at Guy's, and took the M.R.C.S. and L.S.A. in 1852, and the M.D.St. Andrews in 1853. He became M.R.C.P.Lond. in 1860 and F.R.C.S.Eng. in 1867. He entered the Indian Medical Service in November, 1853, seventy-one years ago, attained the rank of brigade surgeon in November, 1879, and retired at the end of 1881, with an honorary step of rank as deputy surgeon-general.

He went to Labuan in Borneo in medical charge of troops in 1855, and not long afterwards his services were lent by the Indian Government to the Colonial Office. In Labuan he spent nearly ten years, holding many and various appointments in succession: colonial surgeon, coroner, police magistrate, superintendent of convicts, Colonial Secretary, judge, and member of the Legislative Council, receiving the thanks of two Secretaries of State for the Colonies, as well as of the Government of Labuan. In 1864 he returned to India, and after holding various military posts was, in 1874, appointed principal medical storekeeper at Madras; he held that office till he retired. After his retirement he joined the Court of the Society of Apothecaries, and served as Master of the Society in 1903-4. The Army List assigns him no war service. He went to India nearly four years before the Mutiny began, but throughout the two years of that campaign he was serving in Labuan, far from India.

Since the death of Surgeon-General Sir Benjamin Simpson, in June, 1923, Clarence Cooper had been the senior officer on the retired list of the I.M.S. His successor as the doyen of the Service is Deputy Surgeon-General Philip Warren Sutherland, who joined the Bengal Service in 1854, and is the only surviving member of the I.M.S. who served in the Indian Mutiny.

Dr. PERCY WILLIAM SPAULL, who died on December 16th at his residence in West Kensington, was educated at St. Thomas's and King's College Hospitals. He obtained the diplomas M.R.C.S., L.R.C.P. in 1894, and in 1909 the Diploma of Public Health. Dr. Spaull was particularly interested in public health administration, and filled the posts of deputy medical officer of health for the metropolitan boroughs of Fulham, Holborn, and the City of Westminster. His other appointments included those of assistant medical officer in the Public Health Department of the London County Council and medical officer to the Post Office. He was a Fellow of the Society of Medical Officers of Health and lecturer on sanitary law and administration at the Battersea Polytechnic. He was chairman, and formerly secretary, of the Chelsea Division of the British Medical Association.

We regret to record the death of Dr. GORDON ABERCROMBY LANG in Inverness, at the age of 58. His father, the Rev. Gavin Lang, had three brothers, all clergymen of the Church of Scotland, of whom one was Professor Marshall Lang, Principal of Aberdeen University: another kinsman is the Archbishop of York. Dr. Gordon Lang was educated at Aberdeen University, where he graduated M.B., C.M. in 1889. Returning to Inverness he commenced practice, and was appointed to the staff of the Northern Infirmary, holding the post of consulting medical electrologist until the time of his death. He was also school medical officer for the mainland of Inverness until a few months ago, when he was compelled by ill health to resign. His other appointments included those of medical officer of Forbes Dispensary, Inverness, and house-physician to the Great Northern Central Hospital, London. Dr. Lang was interested in motoring from its commencement, and was one of the first to use a car in his practice; this car was steam driven. In his younger days he was a keen athlete, excelling especially at Rugby football. He contributed several papers on hygiene and other subjects to school medical magazines. He was for many years a member of the British Medical Association. He is survived by his widow and one daughter.

Dr. ALAN OSBORNE COURTIS of Oxted died on December 3rd, at the early age of 34, after an operation for appendicitis. He was the son of Sir John Courtis of Llandaff, and was educated at Repton, Pembroke College, Cambridge, and St. Bartholomew's Hospital. He took the diplomas of the English Conjoint Board in 1916 and graduated B.Ch. Camb. in 1921 and M.A. and M.B. in 1922. Dr. Courtis began practice at Oxted about two years ago in partnership with Dr. G. D. Laing of Limpsfield, and during that period had made a large number of friends. He was a member of the Reigate Division of the British Medical Association. He is survived by his widow and a young daughter.

Dr. JAMES ERNEST DUNBAR, who died at Abertillery on December 7th, from pneumonia, was educated at the London Hospital, and graduated M.B., B.S.Lond. in 1906. During the war he served in Palestine and Egypt, and subsequently practised in Wales, eventually settling down about two years ago in Abertillery. He was buried at Risca cemetery on December 10th. A colleague (D. T. R.) writes: His friends knew Dr. Dunbar as a man with a very lovable nature, sterling qualities of mind and heart, honesty of purpose, and great natural ability.

Dr. JAMES DOOLEY, O.B.E., formerly of Creswell, died at his home at Knocklong, co. Limerick, on December 6th, aged 43. He was educated at the Catholic University, Dublin, and graduated M.B., B.Ch., B.A.O., N.U.I., in 1910. After acting as assistant to Dr. Wood of Creswell he subsequently entered into partnership. Dr. Dooley was keenly interested in local sports and pastimes, and was also medical officer to the Creswell Boys' Brigade. On his leaving the village in January last he was presented by the brigade with a gold wristlet watch and by the hockey club with a silver cigarette case. During the war he was medical officer of the V.A.D. Hospital at Creswell, for which services he was awarded the O.B.E.

The Services.

DEATHS IN THE SERVICES.

Lieut.-Colonel Joseph Gibson, R.A.M.C. (ret.), died on October 1st, aged 68. He was educated at Trinity College, Dublin, where he graduated M.B. and Ch.B. in 1878. Entering the army as surgeon on February 5th, 1881, he became lieutenant-colonel after twenty years' service, and retired on July 15th, 1908. He served in the Burmese campaign in 1885-87, receiving the medal with a clasp, and in the South African war in 1900-2, when he took part in operations in the Transvaal and Cape Colony, and received the Queen's medal with three clasps and the King's medal with two clasps.

Major Robert Carlyle Carlyle, R.A.M.C., is reported as having been killed in the mutiny of black troops at Khartoum on the evening of November 27th. He was born on September 22nd, 1887, was educated at Edinburgh, where he graduated M.B. and Ch.B. in 1911, and entered the army on July 26th, 1912. He was seconded for service in the Egyptian army on February 10th, 1917, and attained the rank of major on July 27th last.

Medical News.

DR. CHARLES SANDERS, who recently retired from the post of medical officer of health for the Borough of West Ham, was, on December 11th, presented by the Public Health Department with a handsome framed illuminated address (bearing 116 signatures) and a leather suit case, and by the Schools Medical Service with an inscribed silver-plated salver, and entrée dishes. Dr. F. G. Collins (medical officer of health) and Dr. Skerrett (schools medical officer), who made the presentations, testified to the esteem in which Dr. Sanders was held. Mrs. Sanders was presented with a leather handbag.

DR. P. SMYTHE HICHENS, on the occasion of his retiring from the post of honorary physician to the Northampton General Hospital after twenty-three years' service, has been presented with his portrait in oils and a cheque on behalf of over eighty subscribers to a public testimonial fund.

IN response to an appeal recently made by the chairman of drectors of Dundee Royal Infirmary for completing extensions to the Caird Hospital, a sum of £5,000 has been sent by Mrs. Marryat, a sister of the late Sir James K. Caird, Bt., Dundee, who two years ago gave £20,000 for the same department of the infirmary.

A SPECIAL number of the *Bruxelles Médical* has been devoted to an account of the proceedings of the annual medical congress known as "Journées médicales de Bruxelles," which was held at Brussels from June 29th to July 2nd.

THE annual dinner of the Yorkshire Association of Graduates of the University of Glasgow was held in the Great Northern Hotel, Leeds, on December 5th, when there was present a company of ninety members and friends, the President, Dr. George Hanson (Bradford), in the chair. The chief guests were Professor John Glaister and Dr. J. B. Baillie, the recently appointed Vice-Chancellor of Leeds University. The annual report shows that the association is in a flourishing condition, with a membership of 126. Membership is open to all Glasgow graduates resident in Yorkshire; particulars may be obtained from the honorary secretary, Dr. William MacAdam, Cromer Hall, Leeds.

MR. ALLAN WYON, sculptor, has presented to the Leeds University a bronze medallion in memory of his brother, the late Dr. G. A. Wyon, formerly lecturer in pathology in the University.

SIR ARBUTHNOT LANE will lecture on the treatment of fractures in the West Lecture Hall of the Royal Society of Medicine on January 20th at 5.30 p.m. The London Temperance Hospital, in association with special hospitals, will hold a two weeks' intensive course from January 12th in all the general and special departments of medicine and surgery. A special course in cardiology, limited to sixteen, has been arranged from January 12th to 23rd at the National Hospital for Diseases of the Heart. From January 5th to 31st the Royal Eye Hospital (Southwark) will hold a course in ophthalmology, and there will be a special course in the diagnosis and treatment of common diseases of the nervous system at the West End Hospital for Nervous Diseases. Dr. Porter Phillips and Dr. Thomas Beaton will deliver nine lecture demonstrations on psychological medicine, beginning on January 6th, at the Bethlem Royal Hospital. A special course in urology will take place at the St. Peter's Hospital for Stone from January 12th to February 7th provided ten entries are received. The February courses include diseases of children, dermatology, gynaecology, tropical diseases, venereal diseases, and a fortnight's intensive course in medicine, surgery, and the special departments. Copies of the syllabus of these courses may be obtained from the Secretary to the Fellowship of Medicine, 1, Wimpole Street, W.1.

A COT in the children's ward at the Victoria Hospital, Cork, has been endowed as a lasting tribute to the memory of the late Professor W. E. Ashley Cummins, honorary physician to the hospital for over thirty years.

DR. W. F. CORFIELD (M.O.H. Colchester) has been elected a life Fellow of the Royal Sanitary Institute. Dr. A. A. Mussen (M.O.H. Liverpool) has been elected a Fellow.

DR. G. BREBNER SCOTT, barrister-at-law, Middle Temple, has been appointed deputy coroner for the Western District of London.

A DAILY medical journal entitled *El Dia Médico*, which claims to be a medical review of reviews and to be the organ of the medical profession in the daily press, made its first appearance at Barcelona on December 1st. The specimen copy which we have received contains abstracts from Spanish and foreign literature, university and medical society intelligence, reviews of books, and a recent portrait of Ramon y Cajal.

THE Anti-Prohibition League held an international congress in London last June. It has now issued a report of the proceedings at that congress and the text of the papers read before it. The volume, which is an octavo of 156 pages, can, we understand, be obtained (price 5s.) from the League at 123, Pall Mall, London, S.W.1.

A POST-GRADUATE course of two years' duration has been arranged by Professor Comba at the Pediatric Clinic of Florence to train candidates for the diploma of pediatric specialist which has recently been created in Italy by a royal decree.

THE October issue of the *National Medical Journal of China* commemorates the tenth anniversary of the China National Medical Association, whose official organ it is. During the last ten years the Central Government of Peking has been persuaded to allow the official dissection of cadavers in medical schools, and to recognize, since 1915, Western medicine as the proper standard for medical qualification. An effort is now being made to establish a central medical council to control the registration of medical students and practitioners throughout the country. A long list of hospitals and medical schools organized includes a chain of antiplague hospitals and research laboratories in Manchuria. A strong plea is put forward in the journal for an independent headquarters for the association.

PROFESSOR BERGONIÉ of Bordeaux has been awarded the Grand Cross of the Legion of Honour.

DURING the recent war in Chekiang the Hangchow C.M.S. Hospital dispatched a Red Cross unit of twenty-three to the Huchow front. It is hoped to send eventually four or five such units. The hospital is reserving 200 beds for casualties, and for the second time in its existence is acting as a base hospital.

THE late Dr. Alfred Mantle of Harrogate left estate valued at £36,709, with net personalty £33,525.

PROFESSOR JEAN LOUIS FAURE has been elected a member of the Académie de Médecine in the Section of Surgery.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager, 429, Strand, W.C.2, on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429, Strand, London, W.C.2. Attention to this request will avoid delay. Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429, Strand, W.C.2.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westrand, London.*

MEDICAL SECRETARY, *Mediocra Westrand, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361, Central).

QUERIES AND ANSWERS.

LONDON AMBULANCE SERVICE.

"W. A. C."—A London horse ambulance service was started by a voluntary association in 1882. It consisted of three one-horse wagons, which were eventually handed over to the police authorities. These vehicles, which were in existence until the year 1906, were supplemented by 240 litters and 40 hand ambulances. In that year the London County Council unsuccessfully applied to Parliament for powers to establish an ambulance service. In 1910 Sir William Collins introduced a bill with the same purpose, which was passed and received the Royal Assent in October of that year. The service actually came into being in 1915. The Corporation of London had established a service in 1907, but this was confined to the City of London.

AMBULANCE CARS.

"TRANSPORT" has been asked by his committee to arrange some means of transport for patients to and from an isolation hospital in a very wide district, where the cases are not numerous. He would be glad to receive suggestions from any fever hospital medical officer who has had a similar difficulty to meet. He asks whether a trailer has been tried anywhere.

*** We have consulted Major E. W. Paget, C.B.E., liaison officer of the Home Service Ambulance Committee of the Joint Council of the Order of St. John and the British Red Cross Society (19, Berkeley Street, W.1). His reply is as follows: "For isolation hospital work a small two-stretcher ambulance on a chassis of the type used for light American touring cars has been found satisfactory. The body should be coach built rather than of canvas, for ease of disinfection. The cost of such a vehicle is about £200 to £250. Trailers were occasionally made during the war for ambulance work, but a self-contained motor ambulance is now almost universally used." Major Paget is good enough to offer to supply our correspondent with further particulars if desired.

INCOME TAX.

Partnership Assessment.

"R. F. P."—A and B are partners of equal standing, but entitled to different allowances for life assurance and in respect of children. How should they divide the sum of £174 8s. 7d. which they have had to pay on their joint assessments?

*** Assuming that both receive life assurance allowances at the same rate, say 3s., the division should work out as follows:

A's advantage: Life assurance ...	...	£30 at 3s. =	£4 10 0
Children's relief	...	£36 at 4s. 6d. =	8 2 0
			£12 12 0
A's share		£80 18 4	
B's share ... £12 12s. + £80 18s. 4d. =		£3 10 3	
			£174 8 7

We are unable, however, to make this total agree with the figure quoted as the gross assessment, and we suggest that "R. F. P." might request the inspector of taxes to let him have a note setting out how the £174 8s. 7d. should be divided. Such requests are, we believe, frequently made and granted.

X-ray Apparatus.

"X RAY" installed an *x*-ray apparatus in February, 1923, at a cost of £500, of which £40 was paid for plates, developing chemicals, etc., and £5 for insurance of *x*-ray tube. What deductions are due for income tax?

*** No allowance is due for the capital cost of purchase and installation, but deductions can be claimed for running costs and materials, also for insurance. The depreciation allowance is not due because the apparatus is used in a "profession," but the cost of renewal is allowable as and when incurred. The only deductions which "X Ray" can make at present therefore are (1) insurance £5, and (2) cost of materials, etc. Strictly the latter should be restricted to the cost of materials, etc., used in 1923, but the inspector of taxes may agree as a matter of convenience to allow the lump sum of £40 and further similar expenditure as and when incurred. These amounts will be professional expenses affecting the computation of the profit for the year to December 31st.

LETTERS, NOTES, ETC.

CHRISTMAS WEEK.

OWING to the Christmas holidays we have had to send the current issue of the BRITISH MEDICAL JOURNAL to press on Monday instead of Wednesday. This is always a difficult season for the production of a weekly journal, but when Christmas Day falls on a Thursday the dislocation of editorial and printing business is greater than usual—so much so that we can sympathize with the doctor who, when asked by his wife what he would like for a Christmas present, answered "A Christmas past."

PROTEIN THERAPY IN GONORRHOEA.

DR. M. W. BROWDY (London, W.) writes: I was pleased to note the remarks in the *Epitome of Current Medical Literature* for December 13th (No. 469) on the finding of H. E. Ahlswede and W. Busch that non-specific protein is of such value in the treatment of gonorrhoea. I described the method of treatment by injections of sterilized milk in the *Lancet*, April 27th, 1923, with satisfactory results, and since then have found this one of the greatest adjuvants in the treatment of gonorrhoea and its complications.

HYOSCINE IN PARALYSIS AGITANS.

"M.D.," a retired practitioner, sends an account of a case of paralysis agitans in which great improvement followed the administration of hyoscine by the mouth. The patient, a male aged 62, had had the disease for seven years, during which a considerable variety of treatment had been employed. His face was mask-like and florid, and his voice very feeble. Great muscular wasting was present; his hands were cold and livid, and festination was marked. The patellar reflex was feeble, and continuous tremors of the lower jaw, tongue, hands, and legs were present. These tremors often became violent; the patient could not sit down or rise from a chair, cross his leg over the knee, or walk without his feet being placed by a nurse. He could not feed himself, and the food tended to drop out of the mouth. Hyoscine hydrobromide 1/200 of a grain was given, diluted with water, and another dose of 1/150 of a grain was given four days later. Seven days after the first dose general improvement was noted, and two days later the third dose, 1/100 of a grain, was given. Twelve days after the first dose the more violent tremors were absent, and the patient was generally better. The dose was increased gradually up to 1/50 of a grain, steady improvement resulting. Within a month of the commencement of the treatment the patient had regained complete control of his legs and could walk both forwards and backwards. A week later he was able to rise from his chair and walk up and down stairs without help, a thing he had been unable to do for five years. The treatment was continued, the dosage being varied as required. The patient lived in comfort, and died eventually of bronchitis. No untoward symptoms attended the use of hyoscine, which was the only remedy employed by our correspondent.

BACKWARD DISPLACEMENT OF THE UTERUS.

DR. HEYWOOD SMITH (Chichester) writes: Dr. Archibald Donald in his lecture (December 13th, p. 1087) makes some observations, not wholly favourable, on the treatment of cases of retroversion by pessaries. In my practice at the Hospital for Women about forty-five years ago we observed a large number of cases not only relieved but cured by the proper use of a pessary. But then it must be proper, both in the method of replacement and in the pessary employed. First the uterine sound should be passed with great care, the turn made, and, with the finger on the cervix, the uterus slowly placed in the normal position. Then a proper pessary is introduced. The usual Hodge is too flat, and many practitioners use too short a one, and so the uterus slips back into its abnormal position. The proper Hodge is a Smith-Hodge, devised about the same time by Dr. Albert Smith of America and myself. In this pessary the upper portion is curved considerably forwards and the lower portion somewhat backward, so that when in position—and as long a one as can be comfortably borne is used—the uterus is kept in its forward position by the upper forward curved portion of the pessary; the lower portion being bent back, there is no inconvenient pressure on the urethra. If the patient is instructed to use the douche carefully, there is no need for frequent visits to the doctor, although she should be warned not to allow too long intervals to elapse, especially if any discomfort arises.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

DR. J. DICKINSON LEIGH, F.R.C.S.Ed. (tuberculosis medical officer, Sunderland), writes: From the recently published list of Fellows of the Royal College of Surgeons of Edinburgh I find that out of a total of about 1,800 there are 203 resident in Scotland as against 708 living in England. I write to suggest the formation of an association of Fellows resident in England. Much might be done in the way of raising funds to endow lectures to be delivered on the lines of those given at the sister college in London, and also to throw open examinerships to men on this side of the border. It is an encouraging sign to find that one examiner for the D.P.H. has been appointed from England in the person of Dr. Cookson. Surely this appointment is unique.

A TRIP TO TIMBUCTOO.

To receive a circular endorsed by the familiar name of Thomas Cook and Son, giving times and fares of a trip to Timbuctoo, makes the reader think that the earth must be shrinking as fast as, according to Professor Jeans, the sun. The tourist goes by way of Marseilles and Algiers to rail-head at Colomb-Bechar, and thence by motor cars of the enterprising Citroën Company, which provides them also with hotels or camps. The motor trip from rail-head to Gao takes eight days. From Gao to Timbuctoo the journey (two days) is made by motor boat on the Niger. It is not a poor man's holiday, for the fare from Colomb-Bechar to Timbuctoo and back is £475, and if the traveller steps off he pays £6 a day; but it must be interesting.

WARMING THE ENGINE.

MESSRS. A. W. GAMAGE of Holborn, E.C., sell a small lamp—the "Warma" Radiator Lamp—for 14s. 9d. designed to protect motor car radiators from frost and to make engine-starting easy on cold mornings. The lamp is made on the principle of the safety lamp, the wick burning inside a cylinder of gauze. Round the gauze cylinder is fitted a radiating muff of crinkled metal, said to have the effect of increasing the heat, but useful at all events for protecting the gauze from injury. One filling of paraffin will keep the lamp burning for about forty hours. The lamp is said to be quite safe so long as the gauze is uninjured; and such an accessory should be useful in protecting the cylinders and radiator from damage in a cold garage.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 28, 29, and 31 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 30 and 31.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 332.